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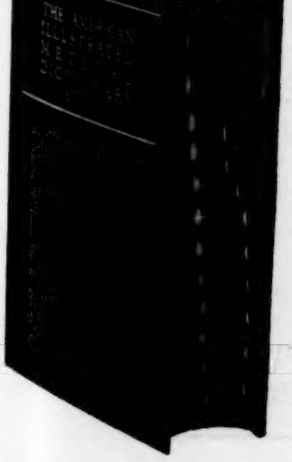

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THE DIAGNOSIS AND TREATMENT OF ACHYLIA PANCREATICA

J. M. BEAZELL, PH.D., M.D.

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AND

A. C. IVY, PH.D., M.D.

CHICAGO

Studies on the effect of achylia pancreatica on digestion and absorption in experimental animals have been numerous and consistent. It has been clearly demonstrated that exclusion of pancreatic juice from the intestine results in a decided increase in the quantity of fat and nitrogen,[1] starch [2] and the total carbohydrate [3] eliminated in the feces. In view of the uniformity of these results, the negative results reported by some of the older workers [4] can be attributed to a simple failure to exclude all pancreatic juice from the intestine.[5]

Reports on the value of substitution therapy in experimental achylia pancreatica have not been entirely harmonious. Pratt, Lamson and Marks,[5] Cruickshank,[6] Nasset, Pierce and Murlin,[7] Selle [8] and Schmidt, Beazell, Crittenden and Ivy [9] all observed a significant reduction in the quantity of nitrogen wasted in the feces when adequate substitution therapy was instituted. Coffey, Mann and Bollman,[10] on the other hand, were unable to demonstrate any specific effect. In agreement with Selle [8] the latter authors also found that enzyme therapy was without effect on the quantity of fat wasted in the feces. In contrast, Schmidt, Beazell, Crittenden and Ivy,[9] Pratt, Lamson and Marks [5] and Cruickshank [6] all reported that oral enzyme therapy had a decidedly favorable effect on fat utilization. We [2] found that substitution therapy effected reductions in fecal starch as great as 50 per cent. Coffey, Mann and Bollman [10] obtained similar results in studies on the utilization of total carbohydrate.

Clinical studies on the effect of achylia pancreatica on food utilization and on the effect of enzyme therapy have been surprisingly consistent. With few exceptions it has been reported that achylia pancreatica is characterized by a noticeable failure in the absorption of both fat and nitrogen and that substitution therapy is of demonstrable therapeutic value. Observations on certain well studied cases reported in the literature, in which the effect of substitution therapy was determined, are summarized in table 1. The results obtained during control periods illustrate the magnitude of the disturbance in digestion and absorption that occurs when pancreatic juice is excluded from the intestine in man.

Since the number of well studied patients are few, and since oral pancreatic enzyme therapy in man is not generally considered to be of value, a view that is inconsistent with most of the results of animal experimentation, we have undertaken to determine the effectiveness of oral pancreatic enzyme therapy in human patients with achylia pancreatica.

We have carefully studied 4 patients in whom a definite diagnosis of achylia pancreatica has been established and have observed the effect of the oral administration of pancreatic enzymes on them for from a few months to three and a half years.

BRIEF HISTORIES OF THE PATIENTS STUDIED

The following brief reports include the significant information gained from the history and the examinations made prior to our study:

CASE 1.—W. M., a white woman aged 65, in August 1938 complained of frequent bulky stools, loss of 22 pounds (10 Kg.) and extreme inanition. The symptoms had originated insidiously about nine years earlier. She had been under treatment for diabetes mellitus since 1931, but in spite of satisfactory control of the diabetes (insulin 15-5-15 units) she had continued to lose weight and strength.

Aside from emaciation and irregular, sluggish pupils, physical examination gave essentially negative results. Urinalysis revealed sugar ++, pus cells ++ and albumin a trace. The

The Wilson Laboratories, Chicago, supplied the pancreatin used throughout this study.

From the Department of Physiology and Pharmacology, Northwestern University Medical School.

Dr. Paul Wosika of Chicago, Dr. H. T. Rickett of Billings Hospital, University of Chicago, and Dr. D. R. Cunningham of Winnetka, Ill., each placed at our disposal 1 patient.

1. Brugsch, T.: Äussere Pankreasfunktion und Pankreasdiagnostik, Ztschr. f. exper. Path. u. Therap. **20**: 473, 1919. Licht, H., and Wagner, A.: Gibt es ein die Fettresorption fördernes inneres Sekret des Pankreas? Klin. Wchnschr. **6**: 1982 (Oct. 15) 1927. Maltby, E. J.: Utilization of Ingested Protein by Depancreatized Dogs, Proc. Roy. Soc. Canada **25**: 203, 1931. Pratt, Lamson and Marks.[5] Cruickshank.[6] Nasset, Pierce and Murlin.[7] Handelsman, Golden and Pratt.[3] Selle.[8] Schmidt, Beazell, Crittenden and Ivy.[9] Coffey, Mann and Bollman.[3]

2. Beazell, J. M.; Schmidt, C. R., and Ivy, A. C.: On the Effectiveness of Orally Administered Diastase in Achylia Pancreatica, J. Nutrition **13**: 29 (Jan.) 1937.

3. Handelsman, M. B.; Golden, L. A., and Pratt, J. H.: The Effect of Variations in the Diet on the Absorption of Food in the Absence of Pancreatic Digestion, J. Nutrition **8**: 479 (Oct.) 1934. Coffey, R. J.; Mann, F. C., and Bollman, J. L.: The Influence of the Pancreas on the Utilization of Food Stuffs, Am. J. Digest. Dis. **7**: 144 (April) 1940.

4. Rosenberg, S.: Ueber den Einfluss des Pankreas auf die Resportion der Nahrung, Arch. f. d. ges. Physiol. **70**: 371, 1898. Niemann, A.: Die Beeinflussung der Darmresorption durch den Abschluss des Pankreassaftes, Ztschr. f. exper. Path. u. Therap. **5**: 466, 1908. Fleckseder, R.: Ueber die Rolle des Pankreas bei der Resorption der Nahrungsstoffe aus dem Darme, Arch. f. exper. Path. u. Pharmakol. **59**: 407, 1908.

5. Pratt, J. H.; Lamson, P. D., and Marks, H. K.: The Effect of Excluding Pancreatic Juice from the Intestine, Tr. Am. Physicians **24**: 266, 1909.

6. Cruickshank, E. W. H.: The Effect of Depancreatization on Digestion, Biochem. J. **9**: 138, 1915.

7. Nasset, E. S.; Pierce, H. B., and Murlin, J. R.: The Influence of Yeast on Protein Metabolism in Normal and Depancreatized Dogs, J. Lab. & Clin. Med. **16**: 1151 (Sept.) 1931.

8. Selle, W. A.: The Effect of Enteric-Coated Pancreatin on Fat and Protein Digestion of Depancreatized Dogs, J. Nutrition **13**: 15 (Jan.) 1937.

9. Schmidt, C. R.; Beazell, J. M.; Crittenden, P. J., and Ivy, A. C.: The Effect of the Oral Administration of Pancreatin on Fecal Nitrogen and Fat Loss in Achylia Pancreatica, J. Nutrition **14**: 513 (Nov.) 1937.

10. Coffey, R. J.; Mann, F. C., and Bollman, J. L.: Substitution Therapy in Experimental Pancreatic Deficiency, Am. J. Digest. Dis. **7**: 149 (April) 1940.

red blood cell count was 4,130,000, the hemoglobin content 11 Gm. and the white blood cell count 8,000. The Wassermann reaction of the blood was ++++ and of the spinal fluid negative. She had received intensive antisyphilitic therapy nine years and a course of bismuth two years prior to our study. The dextrose tolerance curve was of the diabetic type. Gastrointestinal roentgenograms revealed no abnormalities.

CASE 2.—B. D., a white man aged 62, in July 1940 complained of frequent bulky stools, loss of 40 pounds (18 Kg.), and weakness. These symptoms had developed insidiously during the summer of 1939. Diabetes mellitus, diagnosed in June 1940, had been readily controlled with moderate dietary restrictions and protamine zinc insulin 10 units before breakfast.

Aside from the evidences of loss of weight, physical examination gave essentially negative results. The urine contained albumin ++ but was otherwise normal. The red blood cell count was 4,350,000, the hemoglobin content 12.4 Gm. and the white blood cell count 8,500. The Wassermann reaction was negative. Roentgenograms of the abdomen revealed extensive calcification in the region of the pancreas.

CASE 3.—W. E., a white man aged 63, in June 1937 complained of loss of weight (35 pounds, or 16 Kg.), moderate weakness and frequent bulky stools. In May 1934 the patient had had a severe acute illness diagnosed as acute pancreatitis. About one year later, in the absence of other symptoms, an increase in the frequency and volume of the stools followed by loss of weight and strength occurred. At the time of the change in the character of the stools a roentgenologic diagnosis of pancreatic calculi was made.

Aside from the evidence of loss of weight, physical examination and urinalysis revealed no abnormalities. The red blood cell count was 4,850,000, the hemoglobin content 14.3 Gm., and the white blood cell count 11,200. The blood sugar was 75 mg. per hundred cubic centimeters and the Wassermann reaction was negative.

CASE 4.—D. K., a white man aged 40, in February 1937 complained of frequent bulky stools, a loss of 50 pounds (22.7 Kg.) and severe weakness. About three years previously the patient had had an acute attack of pain in the upper part of the abdomen associated with chills, fever, nausea, vomiting and jaundice. This initial attack was followed by a series of similar episodes, some of which were accompanied by ascites and edema. When we saw the patient he had been free of acute symptoms for about six months, but the abnormal stools and loss of weight and strength had continued unabated.

Aside from evidence of a striking loss of weight, physical examination and urinalysis revealed no abnormalities. The red blood cell count was 4,120,000, the hemoglobin content 11.2 Gm. and the white blood cell count 8,700. The Wassermann reaction was negative.

In all 4 of these cases a clinical diagnosis of chronic pancreatitis appears to be justified. In 2 cases (3 and 4) the chronic changes apparently resulted from a preceding acute pancreatitis associated with pancreatic calculi. In case 2 calcification in the absence of acute symptoms suggests a degenerative process rather than obstruction of the duct by calculi. Case 1 probably represents a primary chronic pancreatitis, possibly on a syphilitic basis. It is interesting that the extensive damage to the acinar portion of the pancreas present in all 4 of these cases was associated with concomitant islet damage of sufficient severity to produce diabetes in only 2.

The history and signs presented by these 4 cases warranted a clinical diagnosis of pancreatic achylia. However, in each case an unequivocal diagnosis was established by demonstrating (1) an absence of pancreatic enzymes in the duodenal drainage, (2) an increase in the quantity of both nitrogen and fat in the feces and (3) a reduction in the wastage of both nitrogen and fat with substitution therapy.

We believe that these laboratory determinations are essential for the absolute diagnosis of uncomplicated pancreatic achylia.

LABORATORY PROCEDURES

1. *The Determination of Enzymes in Duodenal Drainage.*—Methods: After testing all the more promising of the enzyme methods we have adopted the following as the most satisfactory of the available tests: amylase (Willstatter's method[11]), lipase (Cherry and Crandall's method[12]) and trypsin (Northrop's nonprotein nitrogen method[13]). In routine examination of the duodenal fluid, 1 part of a satisfactory (clear and definitely alkaline to litmus) specimen is diluted with 24 parts of p_H 7.0 buffer; 1 cc. of this mixture is used for the determination. When an enzyme deficiency is suspected, the duodenal fluid is diluted with only 4 parts of buffer solution. Because amylopsin is destroyed rather rapidly, the enzyme assay should be carried out immediately. If this is not practical, the duodenal fluid should be iced during storage. In no case should the analysis be delayed for more than a few hours.

Results: In all 4 patients there was a total absence of enzyme activity in the duodenal fluid. It should be emphasized that these are the only patients we have encountered for whom this has been true. (The methods are so designed that they would fail to detect the relatively feeble enzymes present in most body fluids and which might be expected to be present in the duodenal fluid in the absence of pancreatic secretion.)

2. *The Determination of Protein and Fat Loss in the Stool.*—Methods: The studies on intestinal absorption and the effect of enzyme therapy have all been conducted in the following manner: The patient is placed on a standard balanced diet supplying 64 Gm. of protein (10.3 Gm. of nitrogen) and 112 Gm. of fat daily for a period of six days. Carmine 5 grains (0.33 Gm.) is given with the first meal on the standard diet, again with breakfast on the fourth day and finally with the first meal after the standard diet has been discontinued. Starting with breakfast on the fourth day, the patient is given with each meal 8 Gm. of potent pancreatin in the form of enteric coated tablets. At the time of the appearance of the first dose of carmine in the stool, collection of the total fecal output is initiated and continued until the last dose of carmine makes its appearance. The carmine given on the fourth day serves to separate the control period from the enzyme period. Immediately after passage the feces are transferred to an air tight bottle containing 5 cc. of toluene and stored in a refrigerator. Each day the total fecal output for the preceding twenty-four hours is weighed, thoroughly mixed and sampled for chemical determinations. The samples for each period (control and enzyme) are pooled and the determinations are carried out on the composite samples. The samples for the nitrogen determination are suspended in sulfuric acid as recommended by Peters and Van Slyke;[14] samples for the determination of fat are preserved in alcohol, which is then used for the initial lipid extraction. Nitrogen is determined by the Kjeldahl method and fat by a modification of Saxon's method.[14] All determinations are conducted in dupli-

11. Schmidt, C. R.; Greengard, Harry, and Ivy, A. C.: A Comparison of Methods for the Quantitative Estimation of Diastase in Duodenal Fluid, Am. J. Digest. Dis. & Nutrition **1**: 618 (Nov.) 1934.

12. Cherry, I. S., and Crandall, L. A.: The Specificity of Pancreatic Lipase: Its Appearance in the Blood After Pancreatic Injury, Am. J. Physiol. **100**: 266 (April) 1932.

13. Northrop, J. H., and Kunitz, M.: Crystalline Trypsin: Experimental Procedure and Methods of Measuring Activity, J. Gen. Physiol. **16**: 313 (Nov.) 1932.

14. Peters, J. P., and Van Slyke, D. D.: Quantitative Clinical Chemistry, Baltimore, Williams & Wilkins Company, 1932, vol. 2.

cate. No information of definite diagnostic value is obtained by determining the ratio of undigested fat (neutral fat) to digested fat (soaps and fatty acids). It has been shown that even in the absence of pancreatic digestion the ratio may be normal.[15]

Results: The results of the absorption studies on the four patients are summarized in table 2. Using the same experimental procedure on normal human subjects on somewhat more liberal diets, we have found the average daily fecal nitrogen to range between 1.5 and 2.3 Gm. and the average daily fecal lipids between 7 and 10 Gm. As is well known, the fecal nitrogen and fat of the normal subject are largely of metabolic origin.[16]

Most of the conclusions to be drawn from an examination of table 2 are self evident. Substitution therapy effected an average reduction in fecal nitrogen of 62 per cent and in fecal lipids of 63.3 per cent. When one thinks of this effect in terms of conserved calories the results are extremely striking. Therapy resulted in an average reduction in fecal nitrogen of 4.85 Gm. In terms of protein, this represents 30.1 Gm. (4.85 × 6.2), or 123 calories (30.1 × 4.1). Therapy resulted in an average reduction in fecal fat of 47.1 Gm., or 424 calories (47.1 × 9). Thus, an average of 547 calories a day, which would otherwise have been wasted, was made available when therapy was instituted. The saving in vitamins (particularly the fat soluble vitamins), minerals and essential amino acids can only be surmised.

It will be noted in the case of patient W. M. that during the control period the average quantity of nitrogen eliminated in the feces was greater than the quantity ingested. Since it appears unlikely that the nitrogen balance was actually negative to such an extent, it is probable that the absorption period was too short (three days) to average out fully the error due to daily variation; i. e., since the quantity of fat or nitrogen excreted in the feces is sometimes subject to relatively wide daily variation, the control test in this patient may have been obtained during a period when nitrogen excretion was greater than average. (Where it is practical, this source of error can be largely eliminated by extending the absorption period to five or more days.) This consideration in no way invalidates the results obtained on this patient. The difference between control and enzyme periods is far greater than could be attributed to daily variation.

3. *Treatment: Results of the Oral Administration of Pancreatin.*—The pancreatin used throughout this study possessed the following activity: trypsin from 50 to 100 per cent above U. S. P. specifications, lipase 2,200 Cherry-Crandall units per gram, and amylase 7.2 Willstatter units per gram. It compares favorably in potency with the best products that we were able to obtain. Of eight products bought at local drug stores and tested, two were essentially inactive and two possessed little more than half the activity of the preparation used.

Immediately after completion of the various tests the patients were placed on a high caloric, high protein, low fat, low residue diet and 8 Gm. of pancreatin, in the form of enteric coated tablets, with each meal, or a total daily dose of 24 Gm. Half of the pancreatin was taken immediately before and half immediately after the meal. Compared to the conventional dose of pancreatin, this quantity is of course tremendous. In terms of replacement therapy, however, it is not so impressive. The pancreatin that we have employed is approximately ten times as potent, weight for weight, as average pancreatic juice. The total daily dose of 24 Gm. corresponds,

TABLE 1.—*The Effect of Achylia Pancreatica on Food Utilization and the Value of Substitution Therapy in Man*

Diagnosis	Percentage of Ingested Fat and Nitrogen Excreted in Feces				Type and Quantity of Enzyme Preparation	References
	Control Period		Enzyme Period			
	Fat	Nitrogen	Fat	Nitrogen		
	63	..	36	..	Raw pancreas	Masuyama and Schild, cited by Tileston
	52	70	20	22	Raw pancreas	Salomon, H.: Berl. klin. Wchnschr. **39**: 45, 1902
	53	87	17	25	Pancreatin	
	72	40	58	27	Pankreon 3 Gm.	Ury, H., and Alexander, M., cited by Tileston
	74	64	35	38	Pankreon 25 Gm.	Meyer, E.: Ztschr. f. exper. Path. u. Therap. **3**: 58, 1906
Chronic pancreatitis	50	43	17	17	Pancreatin 3 grains t. i. d.	Ehrmann, R.: Ztschr. f. klin. med. **69**: 319, 1910
Chronic pancreatitis	73	62	28	20	Pancreon	Tileston, Wilder: Tr. A. Am. Physicians **26**: 513, 1911
Average.....	62	61	30	25		

TABLE 2.—*Results of Absorption Studies*

Patient	Daily Diet		Feces (Average Daily Results)									
			Control Period					Enzyme Period				
	Fat	Nitrogen*	Wet Weight, Gm.	Nitrogen, Gm.	Percentage Ingested Nitrogen in Feces	Fat, Gm.	Percentage Ingested Fat in Feces	Wet Weight, Gm.	Nitrogen, Gm.†	Percentage Ingested Nitrogen in Feces	Fat, Gm.	Percentage Ingested Fat in Feces
D. K.	112	10.3	332	6.00	58	....	..	230	3.7	27.9	....	....
W. E.	112	10.3	361	7.92	77	44.5	40	218	3.6	27.1	28	25.0
W. M.	112	10.3	706	13.30	100†	94.0	84	309	3.1	22.6	21.1	18.8
B. D.	112	10.3	366	4.15	40	84.7	76	155	1.57	11.8	32.7	29.2
Average	112	10.3	441	7.84	76	74.4	66	218	2.99	22.5	27.3	24.4

* The pancreatin administered during the enzyme period contained 2.98 Gm.
† During this period 13.28 Gm. of nitrogen was ingested.

15. Bodansky, Meyer, and Bodansky, Oscar: Biochemistry of Disease, New York, Macmillan Company, 1940, p. 207.
16. Lusk, Graham: The Elements of the Science of Nutrition, ed. 4, Philadelphia, W. B. Saunders Company, 1928, p. 49.

therefore, to approximately 240 cc. of pancreatic juice. This represents only about 15 per cent of the quantity normally estimated to be secreted in twenty-four hours. The initial dose of pancreatin was maintained for one month. Thereafter the daily dose was progressively reduced until, as evidenced by subjective reactions and the character of the stool, a satisfactory maintenance dose was obtained. This has varied among the patients between 2 and 3.3 Gm. with each meal. It is worthy of note that none of the patients have manifested any inclination to revolt against the large dose.

Because it was not specifically indicated, no other form of treatment was instituted. In general, at least temporary supplementation of the diet with vitamins and minerals would appear to be indicated. Indications for other therapeutic measures would, of course, vary with the individual case.

Response to treatment occurred early. As can be judged from table 2, the bulk of the stools was reduced within twenty-four hours. Within the same period of time there was a reduction in the frequency of stools. Gains in weight, reflected by increased strength, were noted within a few days. Patients B. D., M. M. and W. E. are still under observation after periods of six months, a year and a half and three years respectively. D. K. met an accidental death after two and a half months of observation. Table 3 is a summary of changes in weight that have occurred in the various patients.

TABLE 3.—*Summary of Changes in Weight of Four Patients*

Patient	Original Weight	Weight When First Seen by Authors	Period of Treatment, Months	Final Weight
W. M.	120	98	18	138
D. K.	190	140	2.5	155
W. E.	175	142	36	148
B. D.	190	150	6	174

In the case of patient W. E., 148 pounds represents a satisfactory weight, so an effort has been made to stabilize it at that level.

Prior to the institution of treatment weakness had forced W. M. and D. K. to abandon most of their normal pursuits, and because of asthenia their gait was titubant. Asthenia had also significantly restricted the activities of B. D. and W. E. Within a period of a few weeks after starting treatment all the patients were able to resume their normal activities.

COMMENT

Coope [17] is of the opinion that in most cases pancreatic insufficiency can be diagnosed by relatively simple tests, the most important being visual examination of the stool. Certainly in many cases the relatively elaborate tests herein described are not vital to a diagnosis. Correlation of signs and symptoms with the impression gained from visual examination of a twenty-four hour specimen of stool may suffice for clinical diagnosis. If the original diagnosis is confirmed by the results of a therapeutic test (pancreatin therapy) it can be accepted with reasonable assurance. Certain cases defy exact diagnosis, however, unless full advantage is taken of the laboratory. It is only in pancreatic achylia that failure of fat utilization is paralleled by a concomitant failure in protein utilization. However, chemical analysis of the stool may be necessary to demonstrate this characteristic which distinguishes pancreatic achylia from sprue, idiopathic steatorrhea (nontropical sprue), celiac disease, exclusion of bile from the intestine and other conditions characterized by bulky stools. The presence in the stool of many meat fibers along with large amounts of fats and soaps is presumptive evidence that there is significant impairment in the digestion and absorption of protein as well as of fat. In certain cases, however, we have found that chemical analysis for nitrogen failed to confirm the impression derived from microscopic examination of the stool. The bulk of the stool nitrogen is in a form having no morphologic characteristics, i. e. protein in all stages of degradation. In certain cases of "simple" diarrhea (enteritis, colitis) we have found large quantities of meat fiber when the total nitrogen was only slightly greater than normal. Thus it appears that, as an index of total nitrogen, the presence of meat fibers in the stool may be misleading.

As was noted previously, unequivocal diagnosis of pancreatic achylia is possible only when it can be shown that there is an absence of pancreatic ferments in the duodenal drainage, an excess of both fat and nitrogen in the stool and a response to substitution therapy. Theoretical considerations as well as experience have led us to emphasize the importance of the latter determination. We have never seen pancreatic achylia either clinically or in an experimental animal which failed to respond to adequate enzyme therapy. Conversely, in the absence of demonstrable pancreatic insufficiency, we have never seen enzyme therapy effect a reduction in the nitrogen or fat of the stool.

In all cases starch granules, as revealed by microscopic examination, were less abundant in the stools than would be anticipated on the basis of the insufficiency of digestion of protein and fat. This is probably due to two factors: First, salivary and intestinal amylase are both relatively potent hydrolytic agents, so that even in the absence of pancreatic juice significant starch hydrolysis can occur. Second, starch reaching the colon is rather rapidly destroyed by bacteria. The latter fact probably accounts for the distressing colonic flatulence complained of by two of the patients prior to the institution of pancreatin therapy.

It is to be noted that all of the patients discussed in this communication were adults. However, Andersen [18] has shown that, in children, the achylia pancreatica due to cystic fibrosis of the pancreas will respond to adequate pancreatin therapy.

SUMMARY

A review of the literature reveals that it has been conclusively shown that exclusion of pancreatic juice from the intestine in experimental animals results in a decided impairment in the digestion and absorption of protein, fat and carbohydrate. Studies on the effect of enzyme therapy in experimental animals with achylia pancreatica have been less consistent, but there is abundant evidence that adequate therapy increases the utilization of all three of the major foodstuffs (protein, carbohydrate and fat). The few properly conducted clinical studies on patients with achylia pancreatica have uniformly shown that enzyme therapy effects a significant increase in the utilization of protein and fat.

In each of the four cases of achylia pancreatica studied the diagnosis was established by demonstrating (*a*) an absence of pancreatic ferments in the duodenal drainage, (*b*) an excess of both fat and nitrogen in the stool and (*c*) increased absorption of both fat and nitrogen when substitution (enzyme) therapy was instituted. Enzyme therapy decreased the quantity of fat excreted

17. Coope, Robert: The Diagnosis of Pancreatic Disease, New York, Oxford University Press, 1927.

18. Andersen, D. H.: Cystic Fibrosis of the Pancreas, Vitamin A Deficiency, and Bronchiectasis, J. Pediat. **15**: 763 (Dec.) 1939.

in the stool by an average of 63.3 per cent and the quantity of nitrogen by an average of 62 per cent. In all cases a clinical response to therapy was manifested within a few days. The response was characterized by a decrease in the frequency and bulk of the stools, associated with gains in weight and increased strength. Two of the patients who had been reduced to a state of semi-invalidism by loss of weight and inanition were able to resume their normal activities within a few weeks after treatment was instituted. The response of the other two patients was equally satisfactory but less dramatic, because the initial symptoms were less severe.

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TOTAL THYROIDECTOMY IN THE TREATMENT OF DIABETES INSIPIDUS

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Considerable advance has been made in recent years in the physiology of the thyroid gland in relation to the other organs of internal and of external secretion. However, during the past forty-five years, clinicians have reported improved elimination of water in certain forms of nephritis by the administration of desiccated thyroid and more recently of thyroxine, alone or combined with solution of parathyroid.[1] No explanation for the effects noted has been forthcoming beyond the possibility that these drugs increase the mobilization and excretion of calcium. Early work has shown that there is a definite relation between the thyroid and the pituitary gland. As early as 1889 Rogowitsch[2] found alterations in the pituitary glands of thyroidectomized dogs and rabbits in the nature of an increase in certain elements in the glandular or anterior portion. Shortly afterward, Hofmeister,[3] Gley,[4] Pisenti and Viola,[5] Schönemann[6] and others reported changes in the pituitary body following removal or disease of the thyroid. Later, Herring[7] observed after thyroidectomy an increased activity of cells in the pars intermedia and most striking changes in the nervous part of the posterior lobe and in the laminas forming the floor of the third ventricle. Strauss[8] reported a patient aged 9 years, in whom diabetes insipidus developed which progressively disappeared at the age of 13 with the gradual onset of myxedema. Coronedi[9] found a diminished volume of urine after thyroparathyroidectomy in dogs which in general was not much influenced by the ordinary diuretics, although thyroid produced severe diuresis. He considered the kidneys to have a specific physiologic action pertaining to the internal secretion of the thyroparathyroid gland.

Recent studies on the pituitary gland also have suggested that the thyroid gland is involved in the excretion of water through the kidneys. Barnes, Regan and Bueno[10] noted polyuria in dogs after the injection of solutions of the anterior lobe of the pituitary gland, and when thyroidectomy was done polyuria did not occur. Biasotti[11] confirmed these observations and also noted that the diuretic activity of the thyroid was shown anew in tests on dogs which received large doses of desiccated thyroid. Marine and Rosen[12] studied several instances of polyuria in rabbits which developed in connection with experiments on goiter produced by cyanide and alfalfa hay. The polyuria began within two days after the administration of small doses of potassium iodide was begun, and goitrous rabbits thus treated showed intense hyperthyroidism. In 1 instance the polyuria persisted for three months, at which time a thyroidectomy was performed and the polyuria gradually receded. However, when desiccated thyroid was administered, the polyuria recurred on the second day of treatment. Mahoney and Sheehan[13] produced polyuria and polydipsia in dogs by occlusion of the pituitary stalk with a silver clip and noted that this effect was abolished by subsequent total thyroidectomy and reestablished by the oral administration of desiccated whole thyroid gland. Fisher and Ingram[14] produced experimental diabetes insipidus in cats by interruption of the supra-opticohypophysial tracts on both sides and found that the removal of the thyroid gland resulted in a diminution of the water exchange and that the subsequent feeding of thyroid brought on a severe diuresis which persisted for some time after the effect of the thyroid had worn off.

From a review of the literature, it appears that there is a relation between the thyroid and pituitary glands and that the thyroid gland is a factor in maintaining water balance and possibly plays a role in the regulation of the intake and output of fluid in patients with diabetes insipidus. It appeared of value to apply this knowledge clinically in the treatment of diabetes insipidus. Consequently, total thyroidectomy was performed in 1935 on 3 patients with diabetes insipidus. This paper reports the results obtained on these patients after a five year interval.

PLAN OF INVESTIGATION

The general plan of study included various observations made in each case before and after total thyroidectomy. The fluid intake and urinary output were measured daily for many months and periodically after the operations. The specific gravity of the urine was measured at intervals during the day. The basal metabolic rate was determined on thirty-eight, forty and sixty-four occasions in the respective cases. The plasma or serum was analyzed on many occasions for sugar, cholesterol, nonprotein nitrogen, protein, albumin, globulin, chlorides, calcium and phosphorus. The hemoglobin, red blood cell counts and hematocrits were determined. The result of the serum calcium determination taken before thyroidectomy in the first case

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1. Marine, David: The Physiology and Principal Interrelations of the Thyroid, J. A. M. A. **104:** 2250 (June 22) 1935.
2. Rogowitsch, N.: Die Veränderungen der Hypophyse nach Entfernung der Schilddrüse, Beitr. z. path. Anat. u. z. allg. Path. **4:** 453, 1889.
3. Hofmeister, Franz: Zur Physiologie der Schilddrüse, Fortschr. d. Med. **10:** 81, 1892.
4. Gley, Eugène: Recherches sur fonction de la glande thyroïde, Arch. de physiol. **24:** 311, 1892.
5. Pisenti, G., and Viola, G.: Beitrag zur normalen und pathologischen Histologie der Hypophyse und bezüglich der Verhältnisse zwischen Hirnanhand und Schilddrüse, Centralbl. f. die m. Wissensch. **28:** 450, 1890.
6. Schönemann, A.: Hypophysis und Thyroidea, Virchows Arch. f. path. Anat. **129:** 310, 1892.
7. Herring, P. T.: The Effects of Thyroidectomy on the Mammalian Pituitary, Quart. J. Exper. Physiol. **1:** 281, 1908.
8. Strauss, L.: Uebergang eines Falles von Diabetes insipidus in Myxödem, Deutsche med. Wchnschr. **46:** 939 (Aug. 19) 1920.
9. Coronedi, G.: Recherches comparatives sur l'action des diurétiques et de l'extrait thyréoïdien sur le rein du chien thyréoïdectomisé, Arch. ital. de biol. **52:** 336, 1909.
10. Barnes, B. O.; Regan, J. F., and Bueno, J. G.: Is There a Specific Diuretic Hormone in the Anterior Pituitary? Am. J. Physiol. **105:** 559 (Sept.) 1933.
11. Biasotti, A.: Tiroides y acción diurética del extracto de lóbulo anterior de la hipófisio, Rev. Soc. argent. de biol. **9:** 499 (Nov.) 1933.
12. Marine, David, and Rosen, S. H., cited by Marine.[1]
13. Mahoney, William, and Sheehan, Donald: The Effects of Total Thyroidectomy on Experimental Diabetes Inspidus in Dogs, Am. J. Physiol. **112:** 250 (June) 1935.
14. Fisher, Charles, and Ingram, W. R.: Effect of Feeding of Thyroid or Salt and of Thyroidectomy on Fluid Exchange of Cats with Diabetes Insipidus, Arch. Int. Med. **58:** 117 (July) 1936.

was known the day after operation. To our surprise, the calcium content was found to be 14 mg. per hundred cubic centimeters of serum. With such a high calcium level it seemed that there might be a disturbance in the parathyroid glands in this disease because polyuria is also a symptom in some cases of hyperparathyroidism. For this reason, one parathyroid gland was removed for investigation from the subsequent 2 patients. The thyroid and parathyroid glands were studied grossly and microscopically. The weight and the general condition of each patient were noted frequently.

TABLE 1.—*Laboratory Data in Case of Diabetes Insipidus, Before and After Thyroidectomy (Case 1)*

	Before Operation	After Operation		
		7 Mos.	21 Mos.	53 mos.
Basal metabolic rate	+20	−12	+14	+10
Serum *				
Calcium	14.0	11.2	10.6	...
Phosphorus	3.8	3.8	3.8	...
Protein	6.5	6.0	7.6	...
Albumin	4.0	3.4	4.1	...
Globulin	2.5	2.6	3.5	...
Sodium chloride	640	690	650	593
Cholesterol	258	328	260	286
Sugar	101	108	95	...
Nonprotein nitrogen	30	29	23	...
Hematocrit				
Corpuscles	40%	36%	37%	...
Plasma	60%	64%	63%	...
Weight in pounds	211	219	209	194
Erythrocytes	4.32	4.17	...	4.29
Hemoglobin, percentage	81	75	...	85

* In all the tables, the serum data are recorded in milligrams per hundred cubic centimeters except the protein, albumin and globulin, which are expressed in grams per hundred cubic centimeters. The figures for erythrocytes represent millions.

CLINICAL MATERIAL AND REPORT OF CASES

The persons who were studied consisted of 1 woman aged 66 and 2 men aged 27 and 29. All had had diabetes insipidus for a number of years, and the degree of the polyuria and the polydipsia were well established over a long period of time. They were controlled with adequate amounts of solution of posterior pituitary given intranasally or intramuscularly. All had gastric distress at times, which Blotner [15] found frequently in cases of diabetes insipidus. The spinal fluids were not remarkable except for slight increases in the calcium concentration.[16] The etiology was idiopathic in the woman's case and of postencephalitic origin in the men's cases. The Wassermann and Hinton reactions were negative in each case. The men were confined to institutions for chronic conditions because of their neurologic disturbances and because of their helplessness. All were anxious to have the operation, with the hope that they might be relieved of the diabetes insipidus, and they were extremely cooperative in this investigation. The total thyroidectomies were performed by Cutler. Because of the results, the individual cases are presented:

TABLE 2.—*Basal Metabolic Readings in Case 1 Before and After Thyroidectomy on June 24, 1935 (No Thyroid Was Given)*

Date, 1935	Basal Metabolic Rate	Date, 1936	Basal Metabolic Rate	Date, 1937	Basal Metabolic Rate
6/19	+20	1/14	−12	10/26	+11
6/20	+21	2/11	−17	11/23	+ 3
7/ 2	+ 8	3/10	−18		
7/13	+11	4/29	+ 4	1938	
8/ 6	− 2	5/ 4	−11	11/ 8	+ 8
8/ 8	+11	5/ 5	− 1		
8/19	− 7	9/16	− 5	1939	
9/10	−12	9/26	− 5	3/28	+26
9/16	−19	11/17	−10	6/13	+16
9/23	+ 2	12/21	− 9	6/20	+ 6
				11/14	+ 3
1935		1937		11/17	+10
10/15	+12	3/ 2	+ 6		
11/26	+26	3/ 9	+14	1940	
12/17	−11	6/ 8	− 3	4/23	+ 4
12/31	−11	10/18	+19	4/30	+10

CASE 1.—Mrs. M. A., a housewife aged 66, was studied in the wards of the hospital for the first time from June 18 to July 16, 1935, although previously she had been observed in the medical laboratory at regular intervals for a period of three years. Her chief complaint was severe thirst and great frequency of urination.

The present illness had begun six years previously, at which time she suddenly noted an insatiable thirst accompanied by abnormal frequency of urination during the day and night. She had been drinking and passing as much as and at times more than 12 to 14 liters. Solution of posterior pituitary administered intramuscularly or intranasally gave relief of the polydipsia and polyuria. The family and past histories were negative. She had been married forty-seven years and had had eleven children. She went through the menopause uneventfully at the age of 41. The physical examination was negative except for great obesity. Her height was 5 feet (152 cm.) and her weight 209 pounds (95 Kg.). The skin was dry. The blood pressure stayed at about the level of 146 systolic and 72 diastolic. The diabetes insipidus appeared to be idiopathic because no signs of a tumor of the brain could be detected by physical examination, roentgenograms or lumbar puncture.

TABLE 3.—*Laboratory Data in L. C., Case of Diabetes Insipidus and Postencephalitic Parkinson's Disease, Before and After Total Thyroidectomy (Case 2)*

	Before Operation	After Operation		
		9 mos.	30 mos.	56 mos.
Basal metabolic rate	+24 to +36	−22	−15	−4
Serum				
Calcium	10.2	9.8	7.6	...
Phosphorus	3.7	2.8	3.9	...
Protein	7.0	8.0	6.9	...
Albumin	3.7	4.0	4.3	...
Globulin	3.3	4.0	2.6	...
Sodium chloride	580	566	555	...
Cholesterol	157	250	263	...
Sugar	90	92	116	...
Nonprotein nitrogen	20	24	33	...
Hematocrit				
Corpuscles	42%	40%	...	...
Plasma	58%	60%	...	...
Weight in pounds	120	158	169	172
Erythrocytes	4.70	5.04	5.02	...
Hemoglobin, percentage	85	95	90	...

Many laboratory tests were made before operation; a summary of the results is given in table 1. The laboratory data were not remarkable except for an increase in the serum calcium and cholesterol and basal metabolism readings of + 20 and + 21 per cent on June 19 and 20. Electrocardiograms showed a preponderance of the left ventricle with a pulse rate of 72.

Thyroidectomy was performed on June 24. For the four days before the operation the intake of fluid ranged from 10,400 to 12,350 cc. and the volume of urine from 9,700 to 10,400 cc. Subsequently the intake and output of fluid have remained at the same level as before the operation. However, solution of posterior pituitary has been possibly a little more effective in controlling the diabetes insipidus than before.

The thyroid gland weighed 16.5 Gm. and contained a small calcified adenoma in the inferior pole. Microscopic examination showed considerable foci of fibrosis. The persisting thyroid follicles varied moderately in size and were mostly low cuboidal, in some places flat. There was considerable variation in staining of the colloid and there was some peripheral scalloping. Capillaries and smaller vessels were slightly congested. The stroma was slightly less discernible than in the normal gland. There appeared to be some hyperactivity of the thyroid gland.

15. Blotner, Harry: Gastric Analyses and Gastric Symptoms in Diabetes Insipidus, Am. J. Digest. Dis. **7**: 73 (Feb.) 1940.
16. Blotner, Harry: The Calcium and Phosphorus in the Cerebrospinal Fluid in Diabetes Insipidus, Am. J. M. Sc., to be published.

The patient has been readmitted to the hospital on six occasions for study for periods which ranged from two to four weeks. The various laboratory data since operation are also given in table 1. These data have not changed remarkably except that the blood calcium level has come down to normal. The cholesterol has remained at an elevated level, which Blotner [17] has shown to occur frequently in diabetes insipidus. The basal metabolic rate was interesting in that it showed a temporary drop after thyroidectomy to —19 per cent without any change in the water balance. However, the metabolism has increased so that now it is about the same as before thyroidectomy without the administration of thyroid, as shown in table 2. Just what is the cause for this rise in metabolism is uncertain. However, it seems likely that there is some aberrant thyroid tissue present to account for this and for the unchanged water metabolism. The thyroid gland was examined carefully after operation and was found to be entirely removed with its capsule. However, the patient did not show any symptoms or signs of hypothyroidism after the operation, and her physical status has remained about the same.

Electrocardiograms taken Dec. 12, 1936 and April 23, 1940 have continued to show a preponderance of the left ventricle with a normal fourth lead. Seven foot roentgenograms of the heart showed no essential change in the measurements of the heart in nine months and again in five years after thyroidectomy, there being some cardiac enlargement which was present before the operation.

CASE 2.—L. C., a man aged 27, single, entered the hospital for the first time Aug. 28, 1935 and was discharged October 25. He too, had been observed previously for several years. He had postencephalitic paralysis agitans and diabetes insipidus. His illness had begun ten years before when he had what appeared to be influenza and sleeping sickness. One year later he noted a staggering gait which became progressively worse. A year after that he began to have difficulty with his eyes, which would roll and become fixed in an upward or downward position for hours; these rollings are the typical oculogyric crises of paralysis agitans. Subsequently there appeared typical and progressive symptoms of paralysis agitans, and the patient began to drink and pass large quantities of water during the day and night. At times he voided from 12 to 14 liters a day, but the average was usually 8 to 10 liters. The polyuria and polydipsia were relieved by solution of posterior pituitary, but this gave him severe headaches. For the past seven years he had been taking daily five or six pills of stramonium, each containing 2½ grains (0.16 Gm.). The difficulty in walking became progressively worse, and the ocular attacks were more frequent and of longer duration, often lasting for a whole day or even longer. The family and past histories were essentially negative. The patient's weight had been 145 pounds (66 Kg.) about four years previously, and the present weight was about 124 pounds (56 Kg.).

Physical examination revealed him to have typical paralysis agitans. His height was 67½ inches (171 cm.) and his weight 120 pounds (54 Kg.). The blood pressure was 148 systolic and 98 diastolic. The patient had a staring facies. The mouth was kept open and the tongue protruded most of the time. The eyeballs moved spastically. The teeth were extensively carious. The patient had a definite parkinsonian gait with noticeable shuffling of the feet on locomotion and dragging of the left leg. There was a severe tremor of the hands with voluntary movement. A roentgenogram of the skull was negative.

17. Blotner, Harry: Blood Fat Tolerance Tests in Malnutrition and Obesity, Arch. Int. Med. **55**: 121 (Jan.) 1935.

The various laboratory data are given in table 3; the results are not remarkable except that the blood cholesterol content was decreased and the basal metabolism increased to + 24 and to + 36 per cent before operation. Stramonium was given before all, except the first, metabolism tests to control the tremors.

On September 25 a total thyroidectomy was performed and one parathyroid gland was removed. The thyroid gland weighed 16.5 Gm. and was essentially normal, as was the parathyroid gland. The thyroid showed moderately large follicles with an appreciable amount of normally staining colloid. Epithelium lining follicles ranged from low cuboidal to flat. Vascularity was not extensive. The parathyroid gland microscopically showed the cords of alpha and beta cells arranged about small capillaries. The cells were uniform in size and were present in normal proportions. Occasionally small groups of acidophil cells were present.

For five days before the operation the intake of fluid ranged from 7,900 to 10,050 cc. and the urinary volume from 6,800 to 7,600 cc. Subsequently, the intake and output of fluid gradually decreased, so that within a month after the operation they were 3,400 cc. and 3,200 cc. respectively, as shown in chart 1. The specific gravity of the urine, which usually ranged from 1.000 to 1.002 before operation, increased to from usually 1.003 to 1.016 after operation. The various laboratory data after operation, as given in table 3, showed a significant decrease in the basal metabolism, increase in the blood cholesterol and an appreciable increase in the patient's weight. Otherwise, there were no remarkable changes.

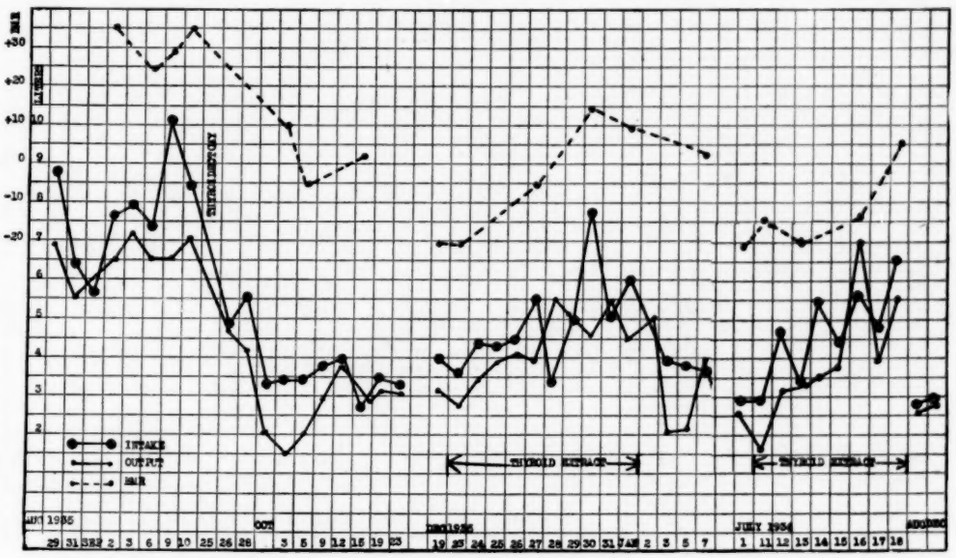

Chart 1 (case 2).—Effect of total thyroidectomy and of the subsequent intake of thyroid during two periods on the intake and output of fluid. One-tenth Gm. of thyroid was taken daily during the first period and 0.26 Gm. daily during the second.

The daily intake and output of fluid continued to remain at a fairly constant volume of about 200 cc. to 300 cc. above or below the 3,000 cc. level, even though the patient had taken 0.015 Gm. of thyroid three times a week. On this regimen his basal metabolism remained at a level of approximately —20 per cent. However, in the past year he has been taking 0.06 Gm. of thyroid daily and his intake and output of fluid have been at slightly higher levels, about 3,700 to 3,800 cc., and the metabolic rate recently ranged from + 22 to — 4 per cent.

In general, the patient has felt and looked better and has had no nocturia. Thyroidectomy has had some beneficial effect on the Parkinson's disease, although he has continued to take the same dose of stramonium. The tremors have decreased so that he can take fluids without spilling them. He is able to walk a little better, and his mouth does not stay open as much as before the operation. The oculogyric crises have diminished considerably in duration and in number, although since he has been taking 0.06 Gm. of thyroid daily they have increased in number. His mentality is the same as it was before the operation. The patient says he is glad that he had the operation.

This patient was readmitted to the hospital on three occasions after thyroidectomy for periods ranging from two to seven weeks for study of the effect of thyroid and of dinitrophenol on water balance. The details of these observations will be discussed with those of the next case. However, in brief, when thyroid was administered the polyuria and polydipsia returned but were not as excessive as before the operation.

CASE 3.—L. R., a man aged 29, single, entered the hospital for the first time on March 7, 1934 with complaints of polydipsia, polyuria and tremor of the left arm and leg for nine years. His illness began in 1924, when he began to be abnormally thirsty and passed an excessive amount of urine. At that time he was in the army and was discharged because of "weak kidneys." In 1926 he had fever and malaise and slept for three days. Subsequently, he was abnormally drowsy for six months. With the beginning of the drowsiness he began to notice trembling of his left arm and leg when at rest, and this became more severe, so that he had to shuffle his left leg when walking. For a year he had had frequent supraorbital headaches. For years he had been taking 1/100 grain (0.0006 Gm.) of scopolamine hydrobromide hypodermically three to four times daily for relief of the parkinsonism. The polyuria and polydipsia continued, and he urinated about fifteen times during the day and about ten times at night; the total volume of urine averaged about 9 liters a day. These symptoms were relieved with solution of posterior pituitary, which gave him headaches. The family and past histories were essentially negative.

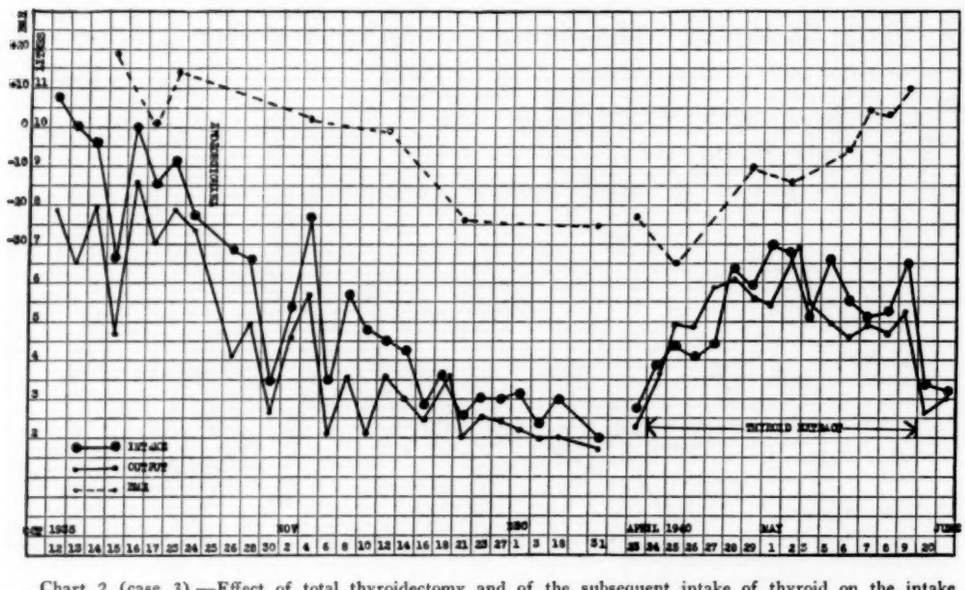

Chart 2 (case 3).—Effect of total thyroidectomy and of the subsequent intake of thyroid on the intake and output of fluid. Thirty-nine hundredths Gm. of thyroid was taken daily for the first nine days and 0.52 Gm. for the last six days.

Physical examination revealed nothing remarkable except the syndrome of paralysis agitans. There was a masklike expression of the face. The mouth was always open. There was a coarse, involuntary tremor of the left arm and the left leg which was constantly present when the arm and leg were at rest. The tremor disappeared with voluntary motion. The diagnosis was diabetes insipidus and postencephalitic paralysis agitans. Roentgenograms of the skull and pneumoencephalograms showed no signs of a tumor.

The patient was readmitted on Oct. 8, 1935 with the same history and symptoms as on the previous admission and was discharged on November 19. His height was 55 inches (165 cm.) and his weight 113 pounds (51 Kg.). The blood pressure was about 140 systolic and 80 diastolic. The various laboratory data before thyroidectomy are given in table 4 and appear within the normal range. Scopolamine hydrobromide was administered subcutaneously before the metabolism tests were done to control the tremors, and the results ranged from 0 to + 19 per cent. No scopolamine hydrobromide was given before the first metabolism test, and the result was + 68 per cent. Before thyroidectomy the daily intake of fluid usually ranged from 8,400 to 10,775 cc., although on rare occasions it was as low as 6,000 cc. The volume of urine usually varied from 6,525 cc. to 8,525 cc.

On October 30 a total thyroidectomy was performed and one parathyroid gland was removed. The postoperative course was gratifying, and the intake and output of fluid dropped rapidly, so that by November 19 these values were 3,660 cc. and 3,710 cc. respectively, with slightly higher and lower variations before this date, as shown in chart 2. The basal metabolic rate dropped to — 23 per cent on November 19. The patient was more than pleased with his condition, and he volunteered the information that for the first time in years he was able to get a good night's sleep because the nocturia had disappeared. His tremors practically disappeared, and he looked better generally, but he continued to take about the same amount of scopolamine hydrobromide. He says that his mind has improved since the operation because he can concentrate and read better now.

The thyroid gland weighed 20 Gm. and showed some evidence of hyperactivity. On section, it showed a slight increase in fibrous tissue as represented by scattered trabeculae, deep gray in color, but the intervening thyroid parenchyma was a pale tan with a deep red cast. Colloid was within normal limits. On microscopic examination, the thyroid showed most follicles of normal size with the usual amount of colloid. A few small follicles were present. Follicles occasionally showed high cuboidal epithelium, although most of the epithelium was low cuboidal, occasionally flat. Some of the follicles lined with high cuboidal epithelium contained little colloid. Rare follicles showed slight papillary projections. The stroma was scant. There was slightly more than the usual degree of vascularity.

The parathyroid gland appeared normal. Microscopically its closely packed cells were arranged in cords with little intervening fat or connective tissue. Most of the cells were of the clear type, but from place to place acidophil cells were scattered among them. The gland was well vascularized.

The various laboratory tests were repeated many times after operation, but the data collected on several occasions are also given in table 4. They show how the metabolism has decreased and how the cholesterol content of the blood has increased. The patient has myxedema but feels comfortable and does not take thyroid. His weight has increased from 113 pounds before operation to 198 pounds (90 Kg.) in April 1940. His basal metabolic rate on many occasions was — 23 per cent. Roentgenograms of the heart taken in April 1940 showed it to be just above the limits of normal with prominence of the left ventricle. Fluoroscopic examination showed a regular beat of fair quality, not the usual poor beat of myxedema.

This patient was readmitted to the hospital on five occasions after thyroidectomy for periods ranging from four to nine weeks for study of the effect of thyroid, dinitrophenol and solution of posterior pituitary on his water balance. Briefly, the administration of thyroid alone increased the intake and output of fluid, as it did in the previous case. The details of these observations will be discussed with those of the second case.

EFFECT OF THYROID ON WATER BALANCE

In order to study the effect of the administration of thyroid on the water balance of these patients after

total thyroidectomy, patients 2 and 3 were readmitted to the hospital each on two occasions for lengthy periods. In these studies they were observed during a control period when no solution of posterior pituitary or dinitrophenol was administered for a long time and when we felt certain that their metabolism was at a basal level. Then thyroid was taken orally for a number of days, and the change in the intake and output of fluid and in the basal metabolism was noted during this period and again after the omission of thyroid. On the charts only a few days of the control periods before and after medication are recorded, and they represent many days of observation.

The results of the observations on the effect of thyroid on the water balance and on the metabolism in these 2 cases are illustrated also in charts 1, 2 and 3. Shortly after thyroid was administered, the intake of fluid and output of urine increased greatly, and these were usually maintained at a higher level during the latter part of the period of thyroid therapy. The polyuria and the polydipsia, however, appeared before the basal metabolism became elevated. After thyroid was omitted the polyuria and polydipsia persisted for an appreciable period of time, even though the basal metabolism had decreased to a low level. This indicates that there is a prolonged effect of this drug on the elimination of water, since the intake and output of fluid returned to their original levels within two weeks to several months after the withdrawal of thyroid.

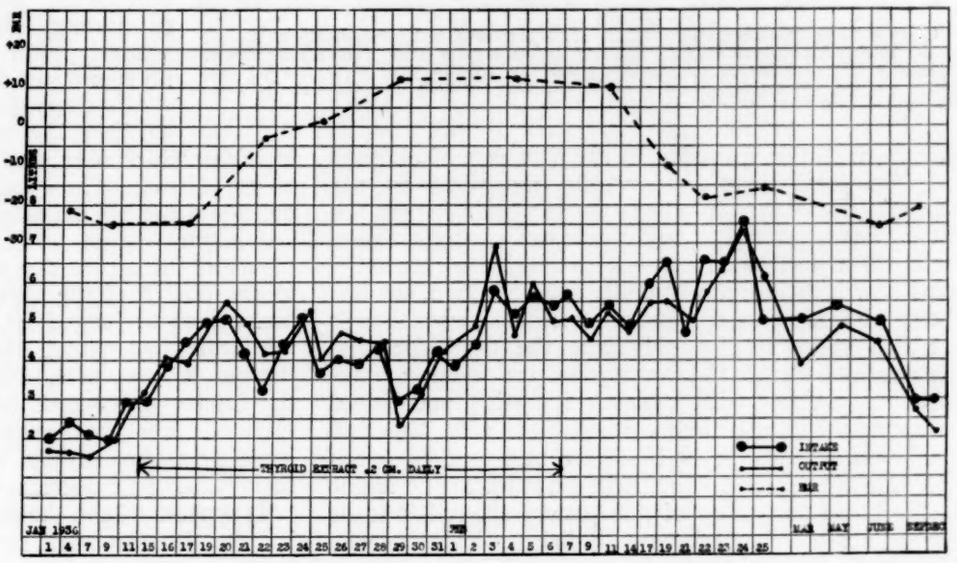

Chart 3 (case 3).—Effect of the intake of thyroid on the intake and output of fluid, and persistence of polyuria and polydipsia for several months after the drug was omitted. Thyroidectomy was done Oct. 24, 1935.

DINITROPHENOL AND THYROID AND WATER BALANCE

It was then decided to determine, if possible, whether the stimulating effect of thyroid on the excretion of water is due to an increased basal metabolism or whether it is due to some specific mechanism. In these studies, patients 2 and 3 were observed during a preliminary control period. Then dinitrophenol was given orally for a period of time until the metabolism was elevated. The drug was omitted, and subsequently the metabolism dropped rapidly to its low level. Thyroid was then given orally, and a comparison was made of the intake and output of fluid during these periods. The whole period of observation in the hospital for this study was two months in each case.

The comparative results of the effect of these drugs are shown in charts 4 and 5. The administration of dinitrophenol did not appear to produce any great change in the water balance even though there was a prompt and great increase in the metabolic rate. The subsequent intake of thyroid did not produce as great an increase in the intake and output of fluid as it did when it was given without dinitrophenol having been given previously. The comparative results with dinitrophenol and thyroid suggest that the diuretic action is not explained by an increased metabolic rate but is probably due to some specific mechanism.

Patient 3 was also in the hospital for six weeks beginning June 9, 1936, during which time he was given 0.5 cc. of solution of posterior pituitary subcutaneously three times a day, which resulted in a decreased intake and output of fluid. Immediately after the omission of the solution, he was given thyroid for a week, which resulted in an increase in his metabolism from — 25 to + 22 per cent. It was interesting that at this time thyroid did not alter significantly his urinary output even though the metabolism was greatly increased.

The effect of thyroid in these 2 cases when it was given shortly after dinitrophenol or solution of posterior pituitary had been omitted appeared to be appreciably less than when thyroid was taken when there was an interval of months between the administration of the drugs. In all instances, the ingestion of thyroid increased the symptoms of paralysis agitans.

COMMENT

Since these patients had total thyroidectomies performed in 1935 there have appeared four reports in the literature in which patients with diabetes insipidus have had either a total or a subtotal thyroidectomy. McConnell [18] reported a case in which diabetes insipidus and thyrotoxicosis, associated with a thyroid adenoma and a metabolism of + 10 per cent, were present at the same time. Removal of the adenoma of the thyroid gland resulted in immediate relief of the symptoms of diabetes insipidus and a basal metabolism of — 20 per cent. McPhedran [19] reported a case of diabetes insipidus associated with toxic goiter in which diabetes insipidus was not improved after subtotal thyroidectomy. The microscopic appearance of sections of the thyroid gland were characteristic of a hyperplastic goiter with colloidal accumulation. Ferro-Luzzi [20] and Findley [21] each

18. McConnell, A. A.: A Case of Diabetes Insipidus Influenced by Partial Thyroidectomy, Irish J. M. Sc., December 1936, p. 742.
19. McPhedran, Harris: Three Cases of Diabetes Insipidus, One Associated with Toxic Goiter, Canad. M. A. J. **39**: 370 (Oct.) 1938. The thyroidectomy was partial. Personal communication to the authors.
20. Ferro-Luzzi, Giovanni: La tiroidectomia nel diabete insipido, Minerva med. **2**: 557 (Nov. 25) 1937.
21. Findley, Thomas, Jr.: Thyroid-Pituitary Relationship in Diabetes Insipidus, Ann. Int. Med. **11**: 701 (Nov.) 1937.

reported a case of diabetes insipidus in which total thyroidectomy had no appreciable effect on the polydipsia and polyuria of the disease. There was no guaranty that all the thyroid tissue was removed. However, it was interesting that both of their patients had syphilis, which may have been a factor in their results.

The results in our 3 cases have shown that total thyroidectomy relieved the diabetes insipidus in 2 of 3 patients with this disease. In the first case of diabetes insipidus total thyroidectomy had no effect on the disease. However, in this case we believe that the patient has accessory thyroid tissue present because her metabolism and blood cholesterol level are much the same now as before the operation. In addition, she has shown no symptoms or signs of myxedema, even though she has taken no thyroid since the thyroidectomy. Blotner and Perkin [22] have studied the iodine metabolism in patients with diabetes insipidus and found an abnormal form of iodine metabolism with high and low levels of iodine in the blood and increased excretion of iodine in the urine. Furthermore, studies [22] on iodine in the blood and urine of this patient showed it to be the same as for the patients with diabetes insipidus who have their thyroid glands. Total thyroidectomy relieved the polyuria and polydipsia in the last 2 cases of diabetes insipidus, of postencephalitic origin, and also improved appreciably the Parkinson's disease. In these 2 cases, one parathyroid gland was also removed; whether the removal of one parathyroid gland in addition to the thyroid gland is a factor in the relief of the diabetes insipidus is questionable. The studies on iodine [22] in these 2 patients indicated that no thyroid tissue was present.

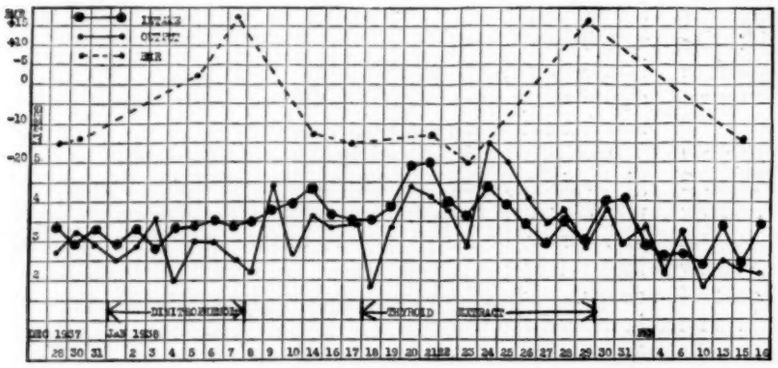

Chart 4 (case 2).—Comparative effects of dinitrophenol and subsequently of thyroid on the intake and output of fluid one and one-half years after total thyroidectomy. Two-tenths Gm. of dinitrophenol was given daily for the first four days, then 0.3 Gm. daily. Thyroid was given daily in doses of 0.13 Gm. for four days, 0.2 Gm. for three days and 0.4 Gm. for five days.

The pathologic condition of the thyroid gland in 2 of the cases indicated evidence of hyperactivity of this gland. Previously, the thyroid gland in diabetes insipidus has not been described as abnormal. However, in McConnell's [18] and McPhedran's cases [19] the abnormal thyroid glands were described as a coincidence. In Findley's case [21] the thyroid gland was described as in an extreme resting phase which might be correlated with a decreased metabolism and was similar to the thyroids from hypophysectomized animals.

Tests were made in addition to show that the removal of the thyroid gland has an effect on the anterior lobe of the pituitary gland. These were done by determining the amount of the thyrotropic hormone in the blood and urine in case 3 seven months after thyroidectomy. Positive evidence of the excretion of thyrotropic hormone was found and, according to Hertz and Oastler, none is obtained normally.

When thyroid was administered to the patients some months after thyroidectomy the polyuria and the polydipsia were reestablished, but these were not as severe or as sustained as before the operation. Thyroid had a much greater effect on the water balance when the basal metabolism was at a low level for many months and not when immediately preceded by the administration of dinitrophenol or solution of posterior pituitary, after which thyroid had practically no significant diuretic response.

We suggest that there is a disturbance in the thyroid-pituitary relationship in diabetes insipidus which may play a part in the clinical aspects of the disease. Our observations have revealed that there is a definite relationship between thyroid activity and water balance. This may be specific and in the nature of an active diuretic principle and not due only to the ability of the thyroid gland to raise the basal metabolism as judged by the comparative responses of the intake and output of fluid to dinitrophenol and to thyroid in our cases. Furthermore, thyroid increased the intake and output before the metabolism became elevated; also they remained at an elevated level for some time after thyroid was omitted, even though the metabolism had decreased to its original low level.

It appears that in the normal person there is a normal balance between the secretions of the anterior and posterior lobes of the pituitary gland. In diabetes insipidus there appears to be a decreased secretion of the posterior lobe and an excess secretion of the anterior lobe. The hyperactivity of the thyroid gland may be due to stimulation resulting from increased activity of the anterior lobe of the pituitary and suggests the possibility that the diuretic effect of the anterior lobe of the pituitary gland is through its regulation of the thyroid. This is suggested also by

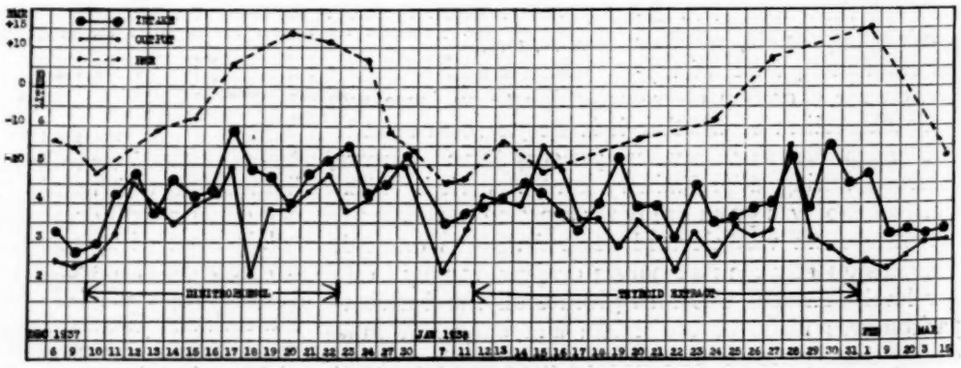

Chart 5 (case 3).—Relative effect of dinitrophenol and subsequently of thyroid on the intake and output of fluid more than two years after total thyroidectomy. One-tenth Gm. of dinitrophenol was given daily for the first five days and then 0.3 Gm. daily. Thyroid was given daily in doses of 0.2 Gm. for nine days, 0.3 Gm. for four days and 0.5 Gm. for seven days.

22. Blotner, Harry, and Perkin, H. J.: Blood and Urine Iodine in Patients with Diabetes Insipidus, lecture delivered at Peter Bent Brigham Hospital, March 5, 1940.

he animal experiments in which diuresis produced by the injection of solutions of the anterior lobe of the pituitary gland is abolished by thyroidectomy. These ideas do not interfere with the work of Ranson and his associates,[23] who showed how the supraoptic hypophysial tract controls the secretion of the hormone of the posterior lobe.

The evidence in our studies justifies the application of thyroidectomy in patients with diabetes insipidus associated with postencephalitic Parkinson's disease.

SUMMARY

Total thyroidectomy was done on 3 patients with diabetes insipidus who have been observed for five years since the operation. The patients studied had acquired the disease many years previous to our investigations and consisted of 1 elderly woman whose diabetes insipidus was idiopathic and 2 young men whose disease was associated with postencephalitic Parkinson's disease.

Total thyroidectomy relieved the diabetes insipidus in the 2 cases of postencephalitic origin and also improved the Parkinson's disease. Total thyroidectomy had no effect on the diabetes insipidus of the first patient, whose disease was idiopathic. However, we believe that this patient has accessory thyroid tissue because of her normal basal metabolism, the lack of symptoms and signs of myxedema and because of the levels of cholesterol and iodine in her blood.

The administration of thyroid, when not recently preceded by dinitrophenol, reestablished the polyuria and polydipsia, but these were not as severe or as persistent as they had been before total thyroidectomy. The diuretic effect of thyroid appears somewhat specific, in the nature of a diuretic principle, and is not due particularly to its ability to raise the basal metabolism. This was suggested by the occurrence of an increased intake and output of fluid while the metabolism was still low after thyroid medication and by the comparative response of the water exchange to dinitrophenol and to thyroid.

Studies of the thyroid gland in 2 cases indicate some hyperactivity of this gland. It is suggested that the thyroid gland plays a part in the clinical aspects of diabetes insipidus.

The evidence in our studies justifies the application of total thyroidectomy in cases of diabetes insipidus associated with postencephalitic Parkinson's disease.

TABLE 4.—*Laboratory Data in Case 3 Before and After Total Thyroidectomy*

	Before Operation	After Operation		
		8 Mos.	2½ Yrs.	4½ Yrs.
Basal metabolic rate	0 to +19	−15	−22	−23
Serum				
Calcium	10.3	9.8	10.1	10.6
Phosphorus	3.4	3.8	3.8	3.6
Protein	6.1	6.3	6.8	7.4
Albumin	3.5	3.7	3.9	4.8
Globulin	2.6	2.6	2.9	2.6
Sodium chloride	630	620	620	603
Cholesterol	189	334	270	443
Sugar	99	72	80	89
Nonprotein nitrogen	27	25	30	...
Hematocrit				
Corpuscles	42%	43%	44%	44%
Plasma	58%	57%	56%	56%
Weight in pounds	113	139	190	198
Erythrocytes	4.65	4.65	4.40	5.00
Hemoglobin, percentage	80	80	80	95

23. Fisher, Charles; Ingram, W. R., and Ranson, S. W.: Diabetes Insipidus and the Neuro-Hormonal Control of Water Balance, Ann Arbor, Mich., Edwards Brothers, Inc., 1938.

ROENTGENOGRAPHIC DIAGNOSIS OF CONGENITAL SYPHILIS

IN UNERUPTED PERMANENT TEETH

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This report demonstrates the value of routine intraoral roentgenograms of unerupted permanent teeth as an aid in the early diagnosis of congenital syphilis.

The growing teeth, like the bones and other organs, may be affected in congenital syphilis. Hutchinson [1] described the screwdriver-shaped and notched permanent upper central incisors as the most common and characteristic clinical dental abnormality. A roentgenographic diagnosis of unerupted Hutchinson incisors was made first by Stokes and Gardner [2] in a patient aged 5 years and subsequently by Meyer-Buley [3] in a patient aged 2 years. Quinlan [4] and others [5] have reported similar diagnoses. While Moon [6] described a characteristic clinical appearance in the permanent first molars, roentgenograms of these teeth prior to eruption have been reported by Pincherle.[6a]

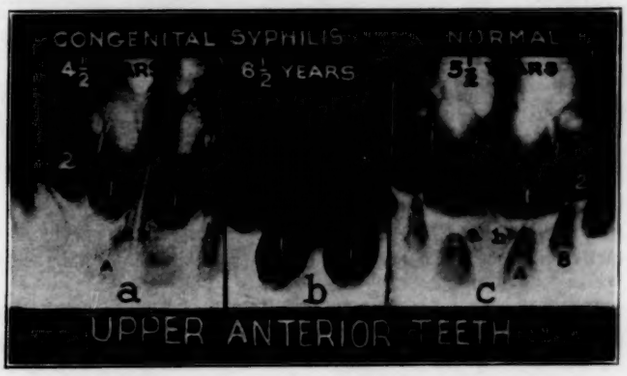

Fig. 1.—(*a*) Deciduous central (*A*) and lateral (*B*) incisors. Unerupted permanent central (*1*) incisor. Note the convergence of the proximal surfaces at about the midcoronal level. The incisal third is irregular in density. The upper lateral incisors (*2*) are not affected. *ab*, alveolar bone. (*b*) The central incisors have erupted. The coronal portion is similar to that in figure 1 *a*. The roots are now nearly completely formed and calcified. (*c*) Note the normal contour of the crowns and divergence of the proximal surfaces. Compare figure 1 *a* and *b*.

REPORT OF CASE

History.—J. W., a Negro girl, born Jan. 8, 1934, apparently had bronchopneumonia during infancy and possibly rickets. A

From the Department of Histology, College of Dentistry, University of Illinois (Drs. Sarnat and Schour) and the Dental Division, Children's Memorial Hospital (Dr. Heupel).

1. Hutchinson, Jonathan: Report on the Effects of Infantile Syphilis in Marring the Development of the Teeth, Tr. Path. Soc. London **9:** 449, 1858.

2. Stokes, J. H., and Gardner, B. S.: The Demonstration of Unerupted Hutchinson's Teeth by the Roentgen Ray, J. A. M. A. **80:** 28 (Jan. 6) 1923.

3. Meyer-Buley, H.: Die Frühdiagnose von noch im Kiefer verborgenen Hutchinson-Zähnen mit Hilfe des Röntgenbildes, Dermat. Ztschr. **58:** 313 (June 30) 1930.

4. Quinlan, R. V.: The Teeth in Cases of Congenital Syphilis: Roentgen-Ray Studies of Unerupted Teeth, Arch. Dermat. & Syph. **16:** 605 (Nov.) 1927.

5. Pitts, A. T.: Discussion on Oral Manifestations of Systemic Disease in Children, Brit. Dent. J. **48:** 1191 (Oct.) 1927. Brown, G. V. I.: The Surgery of Oral and Facial Diseases and Malformations, Philadelphia, Lea & Febiger, 1938, p. 73. Morgan, G. E.: What Procedures Should Be Followed for Early Detection and Correction of Defects in Deciduous and Permanent Teeth? J. Am. Dent. A. **26:** 378 (March) 1939.

6. Moon, Henri, cited by Karnosh, L. J.: Histopathology of Syphilitic Hypoplasia of the Teeth, Arch. Dermat. & Syph. **13:** 25 (Jan.) 1926.

6a. Pincherle, B.: Congenital Syphilis Causing Dental Dystrophy: Hutchinson's and Moon's Teeth, Minerva Med. **2:** 8 (July 8) 1937.

diagnosis of congenital syphilis was made March 27, 1936. Roentgenograms of the long bones were of no diagnostic aid. Treatment had consisted of acetarsone alternated with bismuth salicylate. Interstitial keratitis or deafness due to a lesion of the auditory nerve was not found.

Dental Condition.— Intraoral examination in 1938 revealed the presence of all the deciduous teeth with the exception of the lower incisors. The coronal portion of the upper incisors was worn to the gingival level. Aplasia of the enamel of the cuspid

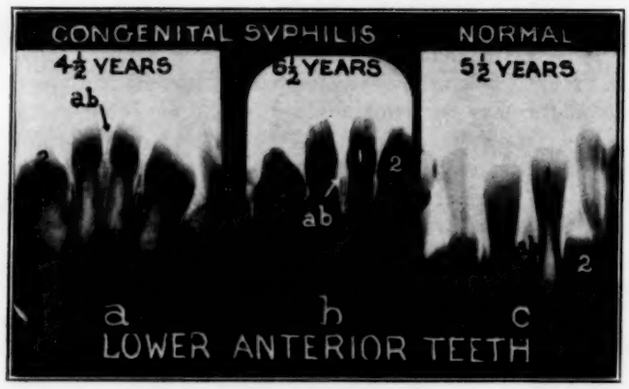

Fig. 2.—(*a* and *b*) The changes in the central (*1*) and lateral (*2*) incisors are similar to those in the upper permanent central incisors in figure 1 *a* and *b*. Note the similar convergence of proximal surfaces of crowns in unerupted (a) and erupted (b) teeth and the progress of the formation of roots. (*c*) Note the normal contour of the crowns and divergence of the proximal surfaces. Compare with figure 2 *a* and *b*.

and molar teeth had occurred during the neonatal period and earliest infancy. No permanent teeth were present in the oral cavity.

Upper Anterior Teeth: Examination of the roentgenograms (fig. 1 *a*) confirmed the clinical observations and in addition showed a screwdriver appearance of the crowns of the unerupted permanent central incisors. The proximal surfaces began to converge at about the midcoronal level. In addition, the incisal third was irregular in density. The cuspids were also affected. The lateral incisors were normal.

In July 1940 clinical examination revealed a typical screwdriver appearance of the crown. The incisal third was pitted and narrower than normal in the mesial and distal diameters. The roentgenograms at this time were similar to those of 1938 except that dental formation, calcification and eruption had progressed (fig. 1 *b*). The coronal portions of the teeth remained unchanged and showed a distinct convergence, in contrast to

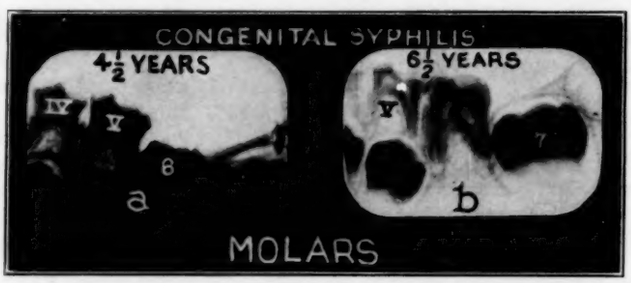

Fig. 3.—(*a*) The erupted deciduous first (*IV*) and second (*V*) molars show aplasia of the enamel such as occurs in the neonatal period and in earliest infancy. Note the occlusal convergence of the proximal surfaces and the irregular occlusal region in the unerupted permanent first molar (*6*). (*b*) Note the erupted permanent first molar, which differs from figure 3 *a* in that the cusps have been abraded and the occlusal surface is relatively flat. Compare with normal unerupted permanent second molar (*7*) as to size and contour.

the characteristic normal divergence of the proximal surfaces toward the incisal edge (figs. 1 *c* and 4).

Lower Anterior Teeth: The roentgenographic and clinical appearance of the permanent central and lateral incisors was similar to that of the upper permanent central incisors and also differed distinctly from the normal (fig. 2 *a, b, c*). In the cuspids a small portion of the incisal edge was affected.

Permanent First Molars: Roentgenograms of all of the unerupted permanent first molars in 1938 showed a convergence of the proximal surfaces toward the occlusal, so that the mesiodistal diameter was less than normal. The occlusal surface was irregular (fig. 3 *a*).

Clinical examination of the same teeth in 1940 showed a constriction of the occlusal surface. The cusps were worn, flat and close together. Roentgenograms taken at this time were similar to those taken in 1938 but showed the growth, calcification, eruption and attrition that had since occurred (fig. 3 *b*). A comparison of the normal permanent second molar with the affected permanent first molar showed distinct differences in the contour and size of the crown (fig. 3 *b*).

The roentgenographic diagnosis of congenital syphilis on the basis of the abnormalities of the permanent incisors and molars made in 1938 was thus confirmed by clinical examination in 1940.

Since these changes occurred in early infancy, they are manifestations of early and not of late congenital syphilis, as has been commonly believed.

COMMENT

The presence of Hutchinson incisors does not necessarily mean that the permanent first molars need be affected. In previous roentgenographic reports, except one by Pincherle,[6a] apparently only the upper permanent central incisors were affected.

The Hutchinson incisor owes its characteristic shape to a disturbance which occurs early in dental develop-

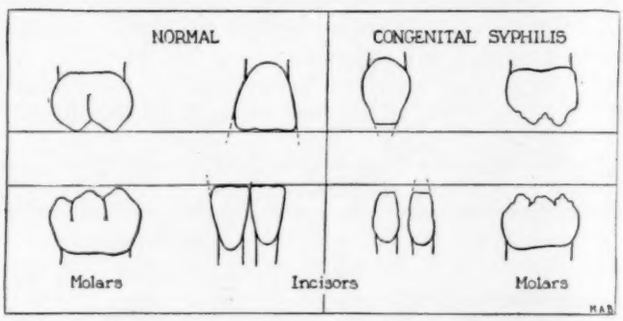

Fig. 4.—Diagrammatic representation of the gross morphologic characteristics observed in the teeth of the patient with congenital syphilis, compared with a normal control

ment in congenital syphilis.[7] This is at the period of morphodifferentiation when the pattern of the dentino-enamel junction (and the future crown of the tooth) is being established. The apposition of enamel which occurs later follows the pattern of the dentino-enamel junction and proceeds normally. Clinically the enamel surface is smooth.[7]

The affected teeth of the patient described show alterations in two different phases of dental development, depending on the developmental stage which obtained at the time of the disturbance. The first is one of disturbed differentiation, in which the basic morphologic pattern of the tooth is affected, giving a convergence of the proximal surfaces of the permanent incisors and molars. Only these teeth are affected in the manner described because they are in the stage of morphodifferentiation at the neonatal period and in earliest infancy, when congenital syphilis is probably most active. Thus the permanent upper lateral incisors are normal because their development occurs at a later period (ten to twelve months).

7. Karnosh, L. J.: Histopathology of Syphilitic Hypoplasia of the Teeth, Arch. Dermat. & Syph. **13:** 25 (Jan.) 1926. de Jonge-Cohen, T. E.: Hutchinson's Tooth: Dental Reduction (Aplasia of Medial Edge Tubercle) from Viewpoint of Normal and Pathologic Anatomy, Nederl. tijdschr. v. geneesk. **76:** 2208 (May 7) 1932. Sarnat, B. G., and Shaw, N. G.: Dental Findings in Congenital Syphilis, to be published.

The second stage is one of hypoplasia or disturbed apposition in the enamel of the deciduous teeth. These teeth are still active in the formation of enamel and reflect the disturbance in this structure. They do not show disturbed morphodifferentiation because this stage is completed before the neonatal period.

The changes in the teeth are permanent [8] while those in bone are subject to resorption. Recently, however, the interpretation of the condition of bone in cases of early congenital syphilis has been questioned.[9] It is interesting that roentgenograms taken of the long bones when the patient was 2 years old were of no diagnostic value. Had intraoral roentgenograms been taken the diagnosis of congenital syphilis could have been confirmed by the dental abnormalities.

After the disturbed neonatal period and earliest infancy another metabolic upset occurred (about three to ten months), as evidenced by the pitted type of hypoplasia of the enamel (chronologic aplasia of the enamel) on the permanent teeth.[10] This is not a frequent condition in congenital syphilis and was probably due in this instance to the bronchopneumonia during infancy or to infantile rickets.

SUMMARY

1. An early roentgenographic diagnosis of congenital syphilis on the unerupted permanent central incisors and first molars of a Negro girl aged 4 years was made and confirmed clinically two years later when the teeth had appeared in the oral cavity.

2. The teeth showed disturbances in the developmental phases which occur during the neonatal period and earliest infancy. The effects were different in the growing deciduous and permanent teeth, depending on the developmental stage active at the time. The deciduous teeth, active in the formation of enamel, showed hypoplasia; the permanent teeth, active in morphodifferentiation, showed a disturbed dentino-enamel junction with a resulting characteristic distortion of the crown.

3. In addition, the presence of hypoplasia of the enamel in the permanent teeth was probably the record of another systemic disturbance which had been present from about the third to the tenth month.

4. The conditions of the teeth are permanent and not subject to change as they are in the bones.

5. Roentgenograms of the unerupted permanent teeth as well as of the long bones should be used as an aid in the early diagnosis of congenital syphilis.

808 South Wood Street.

8. Schour, Isaac: Calcium Metabolism and Teeth, J. A. M. A. **110:** 870 (March 19) 1938. Sarnat, B. G.: The Teeth as Permanent Chronologic Recorders of Systemic Disease: A Clinical and Experimental Study of Enamel Hypoplasia, Proc. Inst. Med., Chicago **13:** 114 (May) 1940.

9. Caffey, J.: Syphilis of the Skeleton in Early Infancy, Am. J. Roentgenol. **42:** 637 (Nov.) 1939. Evans, W. A., Jr.: Syphilis of the Bones in Infancy, J. A. M. A. **115:** 197 (July 20) 1940.

10. Sarnat, B. G., and Schour, Isaac: Enamel Hypoplasia (Chronologic Enamel Aplasia) in Relation to Systemic Disease: A Chronologic, Morphologic and Etiologic Classification, J. Am. Dent. A., to be published.

Beginning of Modern Chemistry.—Modern chemistry begins with Lavoisier (1743-1794). His was the honor of overthrowing the incubus of the phlogiston theory and establishing the modern theory of combustion; of placing chemical experiments on a quantitative basis and so of securing the acceptance of the law of conservation of mass; of founding the modern system of nomenclature by which the composition of a substance may be recognized from its name; and of gaining the widespread acceptance of Boyle's definition of an element. Any one of these contributions would have insured his fame.—Timm, John A., in Development of the Sciences, New Haven, Conn., Yale University Press, 1941.

ARTIFICIAL INSEMINATION

PRESENT STATUS IN THE UNITED STATES AS SHOWN BY A RECENT SURVEY

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AND
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On the completion of the recent survey of the status of artificial insemination in the United States sponsored by the National Research Foundation for Eugenic Alleviation of Sterility, Inc., the following facts were disclosed.

Thirty thousand physicians in this country were circularized. They were chosen because of the nature of their work and their association with a type of practice in which occasion to use artificial insemination might arise. Seven thousand, six hundred and forty-two replies were received. These bore witness to the fact that 9,489 women had achieved at least one pregnancy by this method. Almost two thirds of all the successful pregnancies were effected through the use of the husband's semen alone; of these, 3,569 resulted in boys, while 2,271 resulted in girls. Donors were used successfully in 3,649 pregnancies, of which 2,107 resulted in boys and 1,542 in girls. Figure 1 depicts this situation graphically.

Relationship of Pregnancies to Number of Inseminations

No. of Pregnancies Resulting	No. of Inseminations Employed
3	1
17	2
409	3
61	8
897	9
4,312	12
1,916	14
1,003	15
367	18
139	20
241	21
124	21+

More than 97 per cent of all the pregnancies resulting from artificial insemination terminated in living, normal babies. The remainder included 217 miscarriages and abortions, this incidence being only one fifth or less than that among so-called normal women in whom pregnancies result without aid. There were 22 extrauterine pregnancies in the series, which is only one sixth that of the number which would be expected in an average series of pregnancies. In every case the living children were normal in every respect and by every criterion.

Artificial insemination was employed so successfully that in 1,357 patients more than one pregnancy was effected by this means. The grand total of children sired by the method and here reported is nearly 9,500. The greatest success (45 per cent of pregnancies) occurred in those cases in which twelve inseminations were used. The 4,049 physicians reporting the 9,489 pregnancies required inseminations varying in number from one to seventy-two, as shown in the accompanying table.

In 40 per cent of all inseminations some solution was reported added to the specimen. Frequently operations are employed to cure sterility and make impregnation possible. Nearly four hundred surgical operations

were prevented by the use of artificial insemination (fig. 2). This means that there were nearly twenty-five times as many pregnancies as the total number of cases in which operation had to be considered. More than seventeen times as many operations were avoided as the total number of extrauterine pregnancies occurring in the series, while the relationship to the number of stillbirths was even more striking (32 to 1).

Two thousand, four hundred and seventy-eight physicians never had occasion to use artificial insemination, while 1,115 failed to obtain any pregnancy (fig. 3). When one considers that in a normal couple with normal marital relationships a pregnancy is often not induced until fifteen months have elapsed, it is easily understood why 1,115 reported failure. To be successful in artificial insemination, perseverance must be exercised by both patient and operator.

Of the 1,115 who failed to obtain a pregnancy by artificial insemination, 50 gave no specific number of inseminations used. The other 1,065 physicians answered as follows: Seven hundred and forty tried one insemination, 111 tried two, 91 tried three, 83 tried four, 7 tried five and 33 tried six inseminations.

Throughout the literature there have been many reports of failure and skepticism as to the value of artificial insemination. A careful analysis of these articles, however, will reveal the reasons for failure. Just such a report appeared in a leading medical

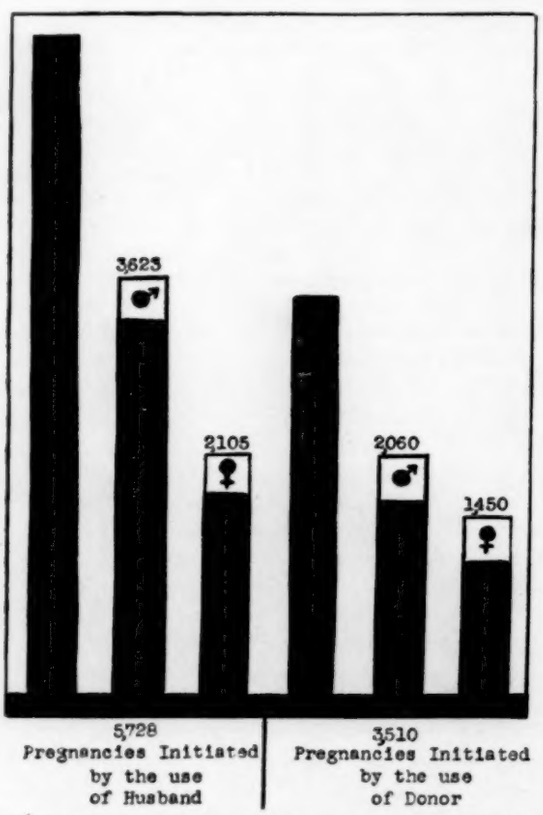

Fig. 1.—Viable pregnancies initiated by the use of artificial insemination; ♂ indicates boys and ♀ girls.

journal this year. One should consider the reasons for the author's large percentage of failures out of a total of 35 reported cases. The report stated that "preliminary study was inadequate." Unless a case is thoroughly worked up, success from artificial insemination cannot be expected. Adequate preliminary study includes, among other things, the establishment of tubal patency, ascertaining the normality of the female endocrine system and procuring satisfactory seminal specimens from an acceptable source. It is doubtless the physician's responsibility to see to it that the full benefit of modern medical knowledge is given to the patient.

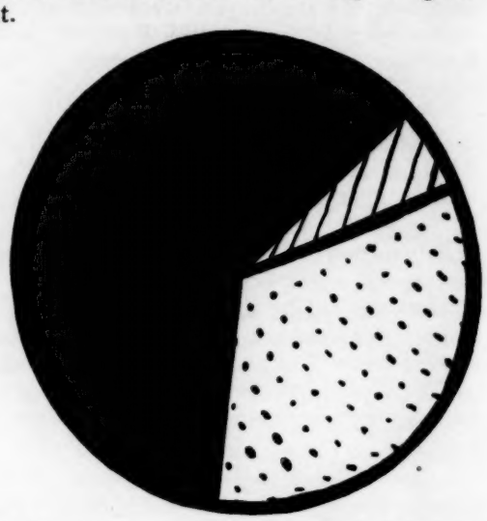

Fig. 2.—Complications with artificial insemination as compared with a normal series of pregnancies. Solid black represents three hundred and eighty-two operations which were made unnecessary by the use of artificial insemination to effect pregnancy; diagonal stripe section represents twenty-two extrauterine pregnancies reported in the series, which are one hundred and ten less than in a normal series of similar number. The dotted field represents two hundred and seventeen miscarriages, or 2.3 per cent reported, whereas in a similar number of normal pregnancies the incidence is as great as 10 to 20 per cent.

The case report continued by stating that the patient was "uncooperative." Cooperation and absolute confidence between physician and patient are required at all times to insure success. "The specimen was sent by messenger without date . . ." To be certain of delivery of authentic specimens from either husband or donor, messengers, when used at all, are chosen most carefully. Arrangements included "selection of the donor by the family." For obvious reasons no choice of donor by the family is permitted. The physician alone has this responsibility as well as that which goes with the whole case.

A fair appraisal of artificial insemination can be obtained only after careful and controlled work. As has been pointed out, many normal newly wed couples do not effect pregnancy until many months of married life have elapsed. Therefore 100 per cent success is not expected from any method, not even from artificial insemination, especially when one's efforts are abandoned after from one to six attempts at insemination.

Because of the lack of absolute knowledge of the time of ovulation in the human being, no case should be considered hopeless until an adequate period of trial has elapsed. A three year period with an average of three inseminations a month should be established, since that would be twice as long as is allowed for unaided pregnancy before the couple is considered sterile. If such cases had not been persisted in, pregnancy would never have ensued, and failure would have been attributed to artificial insemination. Such, in fact, was the case with each of the 1,115 failures reported in this survey.

Only a handful of "flare-ups" resulted through the use of uterosalpingography (less than 0.5 per cent of pregnancies). This is a point that should be par-

ticularly emphasized. Of these, in only 9 was operative intervention required. In the past, certain observers in the literature on sterility have felt themselves forced to write with trepidation of their experiences with uterosalpingography. Now there is no longer any need for such a pessimistic point of view provided the operator chooses his cases with care and employs an accepted technic.

Figure 4 shows the distribution of children who have been sired by artificial insemination. The Central and Atlantic Seaboard sections of the country preponderate in this respect. It is evident that certain sections of the country have been more alert in accepting the usefulness of and employing this new addition to the medical armamentarium. It is to be hoped that the results of this survey will win new friends for this procedure whenever and wherever the need for its use may arise.

SUMMARY

Of nearly ten thousand pregnancies that were obtained through artificial insemination, two thirds were effected through utilization of the husband's semen alone.

The proportion of boys to girls resulting was roughly 8 to 5 when the husband's semen was used and 7 to 5 when a donor's was used.

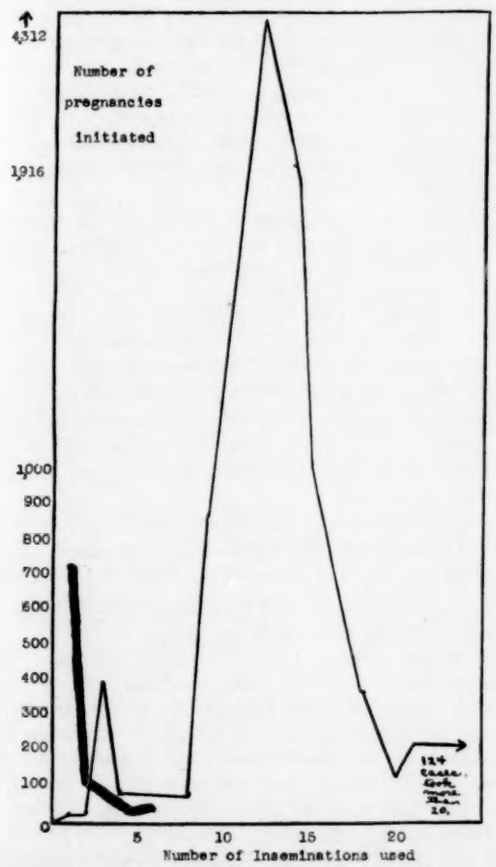

Fig. 3.—Number of pregnancies initiated with regard to number of inseminations made. Fine black line indicates 9,489 reported pregnancies by artificial insemination, and heavy black line represents 1,115 patients who reported failure with artificial insemination.

Ninety-seven per cent of pregnancies initiated by artificial insemination resulted in live babies.

The incidence of miscarriages and abortions was only one fifth that occurring normally in the population taken as a whole in areas where artificial insemination is not practiced.

The incidence of extrauterine pregnancies was only one sixth that occurring normally.

The occurrence of stillbirths was practically negligible.

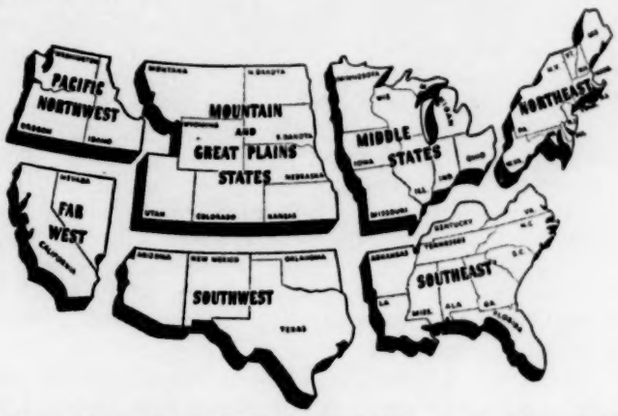

Fig. 4.—Geographic distribution of 9,238 children conceived by artificial insemination: Northeast, 4,260; Southeast, 1,663; Middle states, 2,403; Southwest, 58; Mountain and Great Plains states, 141; Far West, 617, and Pacific Northwest, 96.

"Flare-ups" from uterosalpingography were few and were mostly of a transitory nature.

All living children were born normal in every respect.

One thousand, three hundred and fifty-seven women had repeated pregnancies by artificial insemination.

Nearly ten thousand children were brought into the world by the aid of this procedure.

Forty-five per cent of all pregnancies occurred in cases in which twelve inseminations were employed.

Nearly four hundred surgical operations were prevented because of the use of artificial insemination.

The principal causes of failure can be removed if inadequate preliminary study of the case, lack of cooperation of the patient, unreliable messengers, the use of imperfect seminal specimens and the lack of perseverance on the part of the physician in his attempts at insemination are eradicated.

Successful pregnancies were reported with inseminations varying in number from one to seventy-two.

The Central and Atlantic Seaboard sections have the greatest number of children sired by artificial insemination as well as the largest success with this procedure.

53 East Ninety-Sixth Street.

Protection Against Hemorrhagic Disease.—Vitamin K is the name of a group of substances which protect man and the higher animals against a well characterized hemorrhagic disease. The most important members of this group are vitaman K_1, from green leaves, and vitamin K_2, which is formed by bacteria. Both substances are lipoids. . . . In the vegetable kingdom vitamin K is principally found in all kinds of green leaves. This source contains several hundred units per gram dry weight. Fruits are rather poor sources—an exception is tomatoes. . . . Treatment with vitamin K is now used in all cases where patients with obstructive jaundice are operated, and the risk of bleeding as a consequence of the surgical operation is thereby completely eliminated.—Dam, Henrik: Factors in Preventing the Blood from Leaving the Vascular System, *Quart. Bull. Indiana Univ. Med. Center*, April 1941.

TETANUS FOLLOWING INDUCED ABORTION

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Tetanus following induced abortion appears to be a rare condition, or at least if it is common it has not been reported. In 1931 Mattson and Starkey [1] reported 1 case, with recovery. Komaromy [2] reported 1 case in 1937 and stated that there were numerous cases reported in the literature. In the German literature, Schneider was able to find records of 111 cases, with a mortality of 91 per cent. Komaromy brought out the fact that it is essential to determine whether the inoculation with tetanus took place through other wounds in the skin and was merely coincidental with the abortion. As a result of a survey of the literature, I think it is justifiable to report 5 cases, with a mortality of 100 per cent.

The 5 patients admitted having been pregnant and having sought an abortion and alleged that the abortion was done by the same person in all cases.

REPORT OF CASES

CASE 1.—*History.*—A white woman aged 22 was admitted on Aug. 11, 1940 complaining of stiffness of the neck and jaws. She gave a history of having not menstruated for three months and of consulting a physician requesting an abortion. She stated that a pack was placed in the uterus and that on the following day she began to bleed and had a severe chill. Four days afterward, she was unable to open her jaws and her neck became stiff. She gave no history of injuries such as punctured wounds or foreign bodies in the skin for the month preceding this illness.

Physical examination on admission revealed the temperature to be 98.6 F., the pulse rate 72 and the respiratory rate 16. The physical examination revealed nothing abnormal except inability to open the jaws over ½ inch (1.2 cm.), hyperactive knee jerks and tenderness over the region of the bladder. The red blood cell count was 4,600,000. The hemoglobin content was 90 per cent. The white blood cell count was 8,000, with 1 per cent eosinophils, no basophils, 13 per cent stab cells, 58 per cent segmented cells, 24 per cent lymphocytes and 4 per cent monocytes. The urine was normal. The Kahn, Kolmer and Hinton reactions were negative. Examination of the spinal fluid was not done.

Course.—The temperature, pulse rate and respiratory rate began to increase on the second day after admission, and convulsions began and increased in number and severity; she died on the fifth day after admission. Edema of the lungs was apparently a terminal complication.

Treatment.—The patient received a total of 180,000 units of tetanus antitoxin in doses of 20,000 units given intravenously twice daily. She also received avertin with amylene hydrate rectally for sedation, 50 per cent magnesium sulfate intramuscularly and 1,000 cc. of 5 per cent dextrose in saline solution intravenously every eight hours.

CASE 2.—*History.*—A white woman aged 22 was admitted on Aug. 12, 1940 complaining of flooding and cramping in the lower part of the abdomen. She was about six weeks pregnant when she consulted a physician, requesting that an abortion be done, and a pack was placed in her cervix. This was done about six days before her admission to the hospital. She bled a moderate amount for the first four days and then began to bleed profusely and passed large clots. For eighteen hours before admission she had noted pains in her neck and jaws. The rest of the history was irrelevant except for the fact that she had not suffered a punctured wound or other injuries for the preceding thirty days.

Physical Examination.—The temperature on admission was 99.6 F., the pulse rate 90 and the respiratory rate 20. Physical examination showed her to be normal except for rigidity of the muscles of the neck and jaw, exaggeration of the knee jerks, an enlarged, tender uterus, and a foul-smelling bloody vaginal discharge. The patient was unable to open her mouth more than ¼ inch (0.6 cm.).

The white blood cell count was 10,000, with no eosinophils, 1 per cent myelocytes, 3 per cent juvenile cells, 44 per cent stab cells, 40 per cent segmented cells, 9 per cent lymphocytes and 3 per cent monocytes. The urine was normal. The spinal fluid was clear and colorless, the cell count was 1 and the globulin and Kolmer reactions were negative.

Course.—The patient began to complain of severe pain in the neck and jaws soon after admission, and on the following morning she was stuporous. No convulsions occurred until eighteen hours after admission. The temperature ranged from 100 to 101 F., and the pulse rate ranged around 120. On the following day, her condition remained unchanged except that the temperature was 102 F. most of the day and she was unconscious throughout the day. The respiration was normal and the chest clear. She had several convulsions during the day, and suddenly about 2:15 the following morning she died. The cause of death could not be determined but was attributed to cardiovascular collapse or respiratory paralysis.

Treatment.—The patient received 180,000 units of tetanus antitoxin intravenously in doses of 20,000 units every twelve hours and one dose of 20,000 units intramuscularly on admission. Sodium amytal was given in doses of 6 grains (0.4 Gm.) every four hours by rectum for the first twenty-four hours, and then avertin with amylene hydrate was given by rectum every four to six hours for sedation. She also received ¼ grain (0.016 Gm.) of morphine sulfate for restlessness and 10 cc. of a 10 per cent solution of magnesium sulfate intravenously twice a day. She received 1,000 cc. of 5 per cent dextrose in saline solution every eight hours intravenously.

CASE 3.—*History.*—A white woman aged 33 was admitted Aug. 22, 1940 complaining of stiffness and soreness in the jaws. The patient had passed her menstrual period only a few days when she consulted a physician, who placed a pack in the neck of the uterus. This had been done seven days prior to admission to the hospital. Her first symptoms were noticed on the day before admission. A history of any other wound or injury during the past three weeks could not be elicited.

Physical examination revealed the usual symptoms of tetanus, namely stiffness of the jaws, rigidity of the muscles of the neck, slight spasticity of the abdominal muscles and exaggeration of the knee jerks.

There were 9,500 white blood cells, with 1 per cent juvenile cells, 25 per cent stab cells, 59 per cent segmented cells and 15 per cent lymphocytes. The spinal fluid was not examined.

Course and Treatment.—The patient was handled somewhat differently from the other patients in this series. First, 60,000 units of tetanus antitoxin was given by vein and a moderately large dose of avertin with amylene hydrate was given by rectum. Then the patient was taken to the operating room, and a supravaginal hysterectomy was done, particular attention being given to preventing contamination of the peritoneum. The operative record stated that the uterus was slightly larger than normal and was in second degree retroversion. There was no induration of the tissue. The uterus and adnexa showed a slight degree of hyperemia. The pathologist reporting on the examination of the uterus stated that sections from it showed the endometrium to be fairly normal, not greatly congested, and the glandular structure normal. He stated that he could see nothing abnormal in this tissue and that he did not receive the impression that this had been a gravid uterus. The patient had a fairly normal twenty-four hours after the operation. During the day, she received 1,500 units of tetanus antitoxin, and this amount was given daily intramuscularly. On the day after operation, she also received 450 cc. of citrated blood and

The cases reported were taken from the gynecologic service of the Shannon West Texas Memorial Hospital.

1. Mattson, C. H., and Starkey, T. A.: Tetanus Following Induced Abortion, Minnesota Med. **14**: 737 (Aug.) 1931.
2. Komaromy, G. G.: Tetanus Associated with Criminal Abortion, Am. J. Obst. & Gynec. **34**: 687 (Oct.) 1937.

60 grains (4 Gm.) of sulfanilamide intravenously. Hypertonic magnesium sulfate solution was given intramuscularly every six hours. Morphine sulfate and avertin with amylene hydrate were given to control convulsions but were unsuccessful. The patient was given 500 cc. of a 20 per cent solution of dextrose in water intravenously every eight hours and was also given nasal feedings of egg albumin, milk and whisky. She received also three more transfusions of 300 cc. of citrated blood, and one dose of 30 grains (2 Gm.) of sulfathiazole was given by duodenal tube during the twenty-four hours. In all, the patient received 66,000 units of tetanus antitoxin. She died on the third day after admission and apparently ran the same type of course as the other patients in this series.

CASE 4.—*History.*—A white woman aged 20 was admitted on Aug. 23, 1940 complaining of severe pain in the head and neck. Six days before admission the patient had consulted a physician who placed a pack of gauze in the neck of the uterus. At this time, she thought that she was about two months pregnant. Since this packing, she had been passing clots of blood and had experienced cramping in the lower part of the abdomen. On the evening before admission, she noticed that her jaws were stiff but that there was no particular pain in them. The gauze pack was passed with numerous clots of blood shortly before admission. There was no history of any other injury or break in the skin for the month preceding the present illness.

Physical examination revealed the temperature to be 99 F., the pulse rate 102 and the respiratory rate 20. The mouth was tightly closed, and conversation was limited to movements of the lips. The jaws could not be opened more than ¼ inch (0.6 cm.). The muscles of the neck were quite rigid and the head was held in opisthotonos. Rigidity of the abdomen was not noted, but there was a reflex spasm of the neck and jaws on pressure over the abdomen. The sacrospinalis and erector spinae muscles were rigid. The normal reflexes were present and no abnormal reflexes were noted. There was a foul, bloody vaginal discharge present.

The blood cell count revealed nothing other than mild anemia and a white cell count of 18,000 with a decided shift to the left. The spinal fluid was clear and colorless, and no cells were found. The Kolmer and Kahn reactions were negative, and otherwise the spinal fluid was normal.

Course.—On the day after admission, the patient passed a small piece of placental tissue, and she began to have convulsions soon afterward. On the third day, her chest became filled with coarse rales, the pulse rate and the respiratory rate increased rapidly and the abdomen became distended and rigid. She died on August 26.

Treatment.—In addition to the use of avertin with amylene hydrate by rectum every four hours, she received 10 per cent calcium gluconate in 1,000 cc. of 5 per cent dextrose in saline solution every eight hours. She was given 3,000 units of tetanus antitoxin intraspinally on admission and the same amount again intraspinally on the following day. During the three days time, she received 150,000 units of tetanus antitoxin intravenously and 10,000 units intramuscularly.

CASE 5.—*History.*—A white woman aged 34 was admitted Aug. 26, 1940 complaining of stiffness in the jaws and neck. She stated that she had missed two monthly periods and that she had requested a physician to perform an abortion. Three days later she had passed some large clots of blood and a piece of gauze, and on the day before admission she had begun to have stiffness of the muscles of the neck and jaws. There was no history of punctured wounds or other injuries for one month prior to the present illness.

Physical examination revealed stiffness of the muscles of the neck and jaw, and opisthotonos was present. The abdominal muscles were spastic. There was a foul bloody discharge from the vagina. No evidence of punctured or other wounds elsewhere on the body could be found. The temperature was 100.2 F., the pulse rate 120 and the respiratory rate 28 on admission.

Course.—During the first twenty-four hours, the patient had six convulsions and the course was steadily downhill, the pulse increasing and the respiration becoming rapid and shallow, and she died on the third day after admission.

Treatment.—This patient received 60,000 units of tetanus antitoxin intravenously on admission and 40,000 units the following day. Soluble phenobarbital was given in 5 grain (0.32 Gm.) doses every three hours for three doses, but this failed to control the convulsions. Then avertin with amylene hydrate was given by rectum every four hours, with fair results. The patient also received high voltage roentgen therapy to the pelvis on admission. (The dose was not stated.) One thousand cc. of 5 per cent dextrose in saline solution containing 30 grains (2 Gm.) of sulfanilamide was given every twelve hours intravenously. A 25 per cent solution of magnesium sulfate was given intramuscularly every four hours and was accompanied by ⅙ grain (0.01 Gm.) of morphine. She received also two transfusions of 250 cc. of citrated blood.

COMMENT

It is unusual, I believe, to see 5 patients with puerperal tetanus, all of whom had consulted the same physician within a period of two weeks and all of whom admitted having had a gauze pack placed in the cervix. All of them were admitted to the hospital within fifteen days; 4 died on the third day and 1 survived five days. Four patients had had the pack placed in the cervix six days prior to admission, and the fifth seven days before admission. The onset of the first symptoms in all except 1 of the patients was on the fifth day; 1 felt the first symptoms on the sixth day. The course of the disease was approximately identical in all cases, and no type of therapy apparently influenced the course.

I might say that the reason for the wide variation of the types of treatment given was that each patient was treated by a different private physician. The smallest total dose of antitoxin given was 66,000 units, and the largest was 180,000 units. Intraspinal antitoxin therapy was apparently of no value in the one case in which it was used but apparently did no harm. Various hypnotic and anesthetic drugs used in these cases universally failed to control the convulsions.

As to the causes of death, all the patients suffered embarrassment of respiration, edema of the lungs and collapse of the peripheral vascular system. One patient died suddenly, and the cause of death could not be determined accurately.

The 1 patient on whom supravaginal hysterectomy was done ran exactly the same course as the other patients in the series, and apparently the hysterectomy was of no avail. Her case was interesting because of the fact that the pathologist reported a normal endometrium, and moreover I have never been able to determine from the history or otherwise that she was pregnant.

I feel that all the patients described were infected with the same strain of tetanus bacilli and that it was an extremely virulent strain. I feel also that all the therapeutic measures at hand at the present time in the treatment of tetanus are of little value when the virulence of the organism is great.

I have learned that there were 2 other patients with tetanus who were not admitted to any hospital but who were supposedly infected from the same source, 1 of whom died on the fifth day following infection. The termination of the other case could not be definitely determined.

Clinical Notes, Suggestions and New Instruments

EFFECT OF THE FEEDING OF EGG YOLK POWDER ON BODY WEIGHT

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During the course of a study on the serum cholesterol in a series of patients [1] who were being fed on egg powder, it was observed that a gain in body weight occurred. This observation was of interest in view of the fact that previous efforts to improve the nutrition of the subjects under consideration by means of high caloric diets with vitamin supplements had failed. The results of the feeding of egg yolk powder on the body weight of 10 patients are presented here.

A group of 10 patients, 8 with rheumatoid arthritis [2] and 2 with chronic nephritis without edema, who had been previously hospitalized from two to six months, were observed during a control period of five weeks. A well balanced diet containing from 2,600 to 3,000 calories was fed to the patients during this period. Subsequently the patients were given diets containing from 1,900 to 2,500 calories plus 100 Gm. of egg yolk powder [3] for from four to fourteen weeks. One hundred Gm. of egg yolk powder, on analysis by the R. C. Williams Company, was found to contain 67 Gm. of fat and 22 Gm. of protein, or 620 calories. It was fed in portions of 50 Gm. suspended in milk, with vanilla and sugar added to taste. The total intake during the period of feeding egg yolk powder, therefore, varied from 2,620 to 3,220 calories. Two of the patients were fed egg yolk powder for a second period after an intervening control period.

Effect on Body Weight of Ten Patients of Feeding of Egg Yolk Powder

Patient	Age	Sex	Diagnosis	Control Diet, Calories	No. Weeks	Weight in Pounds				Diet and Egg Yolk Powder, Calories	No. Weeks	Weight in Pounds			
						Onset	End	Gain	Loss			Onset	End	Gain	Loss
1. H. T.	31	♂	Arthritis	3,000	5	110½	110	0	½	3,220	6	110	118	8	0
2. E. C.	38	♀	Arthritis	3,000	5	99¾	99½	0	0	3,220	6	99½	105½	6	0
3. A. G.	37	♀	Arthritis	3,000	5	125	125	0	0	3,220	9	125	140	15	0
4. J. G.	29	♂	Arthritis	3,000	5	159	157	0	2	3,220	8	157	170	13	0
5. M. S. (a)	31	♀	Arthritis	3,000	5	104	104	0	0	3,220	8	104	116½	12½	0
M. S. (b)				3,000	16	116	112	0	4	3,220	6	112	125	13	0
6. M. M.	28	♀	Chronic nephritis	3,000	5	88	86	0	2	2,920	8	86	102	16	0
7. R. B.	34	♀	Arthritis	2,600	5	88	86	0	2	2,520	10	86	95	9	0
8. J. L. (a)	27	♀	Arthritis	3,000	5	96	96	0	0	3,220	14	96	106	10	0
J. L. (b)				2,700	3	94	94	0	0	2,620	5	94	99	5	0
9. M. S.	23	♀	Arthritis	2,700	5	99	97	0	2	2,620	9	97	105	8	0
10. M. P.	18	♀	Chronic nephritis	2,700	5	109	109	0	0	2,620	4	109	109	0	0
											7.7			9.6	

Actual calorie intake estimated.

The accompanying table shows the weights of the patients at the beginning and at the end of the control period and of the period of feeding of egg yolk powder, together with the caloric intake during each period. It can be seen from this table that during the control period in 6 instances a loss of weight occurred varying from ¼ pound to 4 pounds (113 Gm. to 1.8 Kg.). None of the patients gained weight during the control period.

During the periods of feeding egg yolk powder, which averaged seven and seven-tenths weeks, the gain in body weight varied from zero to 16 pounds (7.3 Kg.), the average gain being 9⅗ pounds (4.3 Kg.). The average increase per week per person was therefore 1¼ pounds (0.6 Kg.). A total of 25½ and 15 pounds (11.5 and 6.8 Kg.) respectively was gained by 2 of the patients who received the egg yolk powder for two periods.

In only one instance did a patient fail to gain weight, and in this instance the egg yolk was discontinued after four weeks because it was not tolerated well; diarrhea developed on two occasions during the feeding.

It can be seen from the table that a factor other than caloric intake may play a part in the gain in weight induced by feeding of egg yolk powder. The caloric intake of 5 of the patients during the period of such feeding was slightly below that during the control period. The caloric intake of the 5 remaining patients during the period of feeding of egg yolk powder exceeded that during the control period by approximately 200 calories daily.

The status of rheumatoid arthritis in all the patients as measured by the sedimentation rate remained essentially unchanged during the period of feeding of egg yolk powder.

COMMENT

The addition of egg yolk powder to the diet resulted in a gain in weight in 9 of 10 persons. Some factor other than the caloric value of the egg yolk powder may play a part in the resultant increase in the nutrition of the body. Egg yolk powder is a rich source of vitamins A and D and the water-soluble fraction of the vitamin B complex. The cost of the egg yolk powder was 15.4 cents daily, or $1.08 a week, for each patient.

From the data presented it would appear of value to add egg yolk powder to the list of agents used in stimulating an increase in body weight in special instances.

CONCLUSIONS

1. One hundred Gm. of egg yolk powder was fed to 10 patients, 8 with rheumatoid arthritis and 2 with chronic nephritis without edema, from four to sixteen weeks, with an average of seven and seven-tenths weeks.

2. A gain in body weight varying from 5 to 16 pounds occurred in 9 of the 10 persons. The average increase in weight for the group was 9⅗ pounds. During an initial control period none of the patients gained; 6 actually suffered a loss varying from ¼ to 4 pounds.

3. Egg yolk powder is an economical agent for increasing the nutrition of the body and is, in addition, a rich food source of vitamins A and D and the water-soluble fraction of the vitamin B complex.

893 Park Avenue.

This investigation was aided in part by a grant from the Josiah Macy Jr. Foundation.

From the Research Service, First Medical Division, Welfare Hospital, Department of Hospitals, City of New York, and the Department of Medicine, Columbia University College of Physicians and Surgeons.

1. Steiner, Alfred, and Domanski, B.: Dietary Hypercholesterolemia, Am. J. M. Sc., to be published.

2. The patients with rheumatoid arthritis were members of a group studied by Dr. M. H. Dawson.

3. Made by R. C. Williams Company, New York.

A NEW PORTABLE EMERGENCY TRANSFUSION KIT

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SAN FRANCISCO

We are presenting to the medical profession a small but very compact dried plasma transfusion emergency kit. We know its adoption will materially assist in forging a long sought therapeutic weapon for use by the Medical Corps of our armed forces. The adaptability of this kit for use in civilian practice is unlimited.

We do not intend to enumerate the many well proved and clinically sound reasons for the use of plasma or serum. Articles of great value are available to any reader interested in this new phase of blood plasma transfusion therapy.[1]

In these grim days the need for some fool-proof dependable transfusion outfit which can be set up by any doctor or well trained nurse and utilized at or near the site where the injury occurred is of tremendous importance. Army, navy, air force and even civilian casualties now can be treated immediately by drawing on supplies in strategically placed depots. Experience in the present war has already shown the urgent need for plasma transfusion in shock, burns and hemorrhage. If transfusion is delayed, inevitable and irreversible changes occur in a large proportion of cases. The need has always been present; recent medical advances now make it practical to fill the demand and in so doing many lives can be saved. The demands made on any product being subjected to conditions encountered in modern warfare are many and varied, but we believe the transfusion kit devised by us will more than meet the strict standards we have formulated. Changes in the kit will undoubtedly take place as time passes; we already have ironed out many wrinkles. In its present form a serviceable unit has been arrived at: it will do its bit.

The requirements are that:

1. The product must possess decided therapeutic advantages over the present commonly used substances.

2. The product to be injected intravenously must be absolutely sterile and not harmful to the recipient. The pyrogen free sterile water accompanying the kit should be used.

3. The product should be easy to administer under the most trying and difficult conditions by medical and nursing staffs not expertly trained in intravenous technic.

4. The transfusion unit must be of such a size that it can be easily transported in quantity by airplane; therefore weight and size are major factors.

5. The accompanying dispenser should be so constructed that the plasma can be given as a hypertonic, isotonic or hypotonic solution according to the type of injury encountered.

6. The product must be prepared and administered by the "closed system" technic—this to exclude any possibility of transfer contamination.

7. The product, after reconstruction, must be given immediately.

8. The product must be filtered before intravenous injection.

9. The product should be used with the accompanying intravenous set so that requirements *2*, *3*, *5*, *6* and *8* are complied with.

10. The product should be prepared from pooled plasma, the pool to consist of at least eight to ten individuals.

It is our contention that the kit and contents here described will meet the rigid requirements we have outlined and that these standards must be met by later methods. The original emergency kit will include the following articles. However, two modifications of this set have been devised to meet certain requirements. We believe that type 1 and type 3 kits will be used most frequently. The type 3 kit has been developed to care for those seriously injured patients who require fluid and plasma protein equivalent to 1,000 cc. of whole blood. This set requires a special rig for its manufacture and at the present time there are perhaps not more than three centers in the country that are equipped to handle this type of container. Of course pooling of dried plasma lots would give the quantity, but then transfer contamination again must be considered. The advantages of the type 3 kit are obvious to those conversant with recent trends in blood transfusion work; in the past too small a quantity has been administered in certain conditions such as massive hemorrhage and extensive burns. Reports from plasma centers in England during the last two months support our contentions.

CONTENTS OF KIT

1. Residue from 250 cc. of liquid plasma. On reconstruction with pyrogen free sterile water this would be equivalent to 250 cc. of "wet" plasma or 500 cc. of whole blood. The dry plasma is contained in a 500 cc. vaccine sleeve type rubber stoppered bottle, and this bottle is hermetically sealed in a snug fitting tin can. Cotton wool is tamped snugly about the base and neck. The tin can measures 3½ inches in diameter and is 8 inches tall.

2. Five hundred cc. of pyrogen free sterile water in a calibrated dispenser bottle. This bottle is fitted with the new type sterile cap which ensures sterility after bottling and prevents contamination during administration. The reason we feel constrained to add the 500 cc. container of sterile water is the incontrovertible fact that water is extremely difficult to sterilize

From the Irwin Blood Bank of San Francisco County Medical Society, San Francisco (Dr. Upton), and the Cutter Laboratories, Berkeley, Calif. (B. E. Emery and R. B. Clark).

1. Articles on blood work:

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Aylward, F. X.; Mainwaring, B. R. S., and Wilkinson, J. F.: Effects of Some Preservatives on Stored Blood, ibid. **1:** 685-687 (April 13) 1940; two illustrations, eighteen references.

DeGowin, E. L., and Hardin, R. C.: Reactions from the Transfusion of Preserved Blood: Experience with 1,600 Transfusions, Brit. M. J. **2:** 1-5 (July 6) 1940; twenty-five references.

Levinson, S. O.; Neuwelt, Frank, and Necheles, Heinrich, with the collaboration of D. J. Cohn, and the technical assistance of W. H. Olson, Grace Lawrence and William Scruggs: Human Serum as a Blood Substitute in the Treatment of Hemorrhage and Shock, J. A. M. A. **114:** 455-461 (Feb. 10) 1940; two illustrations, twenty-five references.

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Bushby, S. R. M.; Buttle, G. A. H., and Whitby, L. E. H.: Small-Scale Filtration of Citrated Plasma, Lancet **2:** 131-132 (Aug. 3) 1940.

Minot, A. S., and Blalock, Alfred: Plasma Loss in Severe Dehydration, Shock and Other Conditions as Affected by Therapy, Ann. Surg. **112:** 557-567 (Oct.) 1940; thirty-one references. Bulletin of War Medicine, Medical Research Council number 3, January 1941.

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(Footnote 1 continued in next column)

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Kreeger, M. H.: Cost of Blood Bank Transfusions, Mod. Hosp. **156:** 66 (Jan.) 1941.

Eckert, A. W.: Organization of Civic and Service Clubs for Plasma Banks, from "Hospitals," J. Am. Hospital A. **15,** January 1941.

Levinson, S. O., and Wolf, A. M.: Human Serum: Its Application in Medicine, M. Clin. North America **25:** 219 (Jan.) 1941.

Crosbie, Andrew; Scarborough, Harold, and Thompson, J. C.: Studies on Stored Blood: Five Observations on All Coagulation Mechanisms in Stored Blood, Edinburgh M. J. **48:** 41 (Jan.) 1941.

Elliot, John: Blood Plasma, Weekly Bull. St. Louis M. Soc. **35,** Jan. 10, 1941.

Splatt, B.: Some Observations in Changes in Mineral Content of Plasma and Serum, M. J. Australia **2:** 363 (Oct. 19) 1940; abstr., J. A. M. A. **116:** 170 (Jan. 11) 1941.

Alsever, J. G. and Ainslie, R. B.: A New Method for the Preparation of Dilute Blood Plasma and the Operation of a Complete Transfusion Service, New York State J. Med. **41:** 127 (Jan. 15) 1941.

Elman, Robert: The Therapeutic Significance of Plasma Protein Replacements in Severe Burns, J. A. M. A. **116:** 213 (Jan. 18) 1941.

Harkins, H. N.: Recent Advances in the Study and Management of Traumatic Shock, Surgery **9,** February 1941.

Gradwohl, R. B. H.: New Facts on Blood Groups, with Special Reference to Military Purposes, Mil. Surgeon **88:** 142 (Feb.) 1941.

Kendrick, D. B., Jr.: Prevention and Treatment of Shock in the Combat Zone. ibid. **88:** 110 (Feb.) 1941.

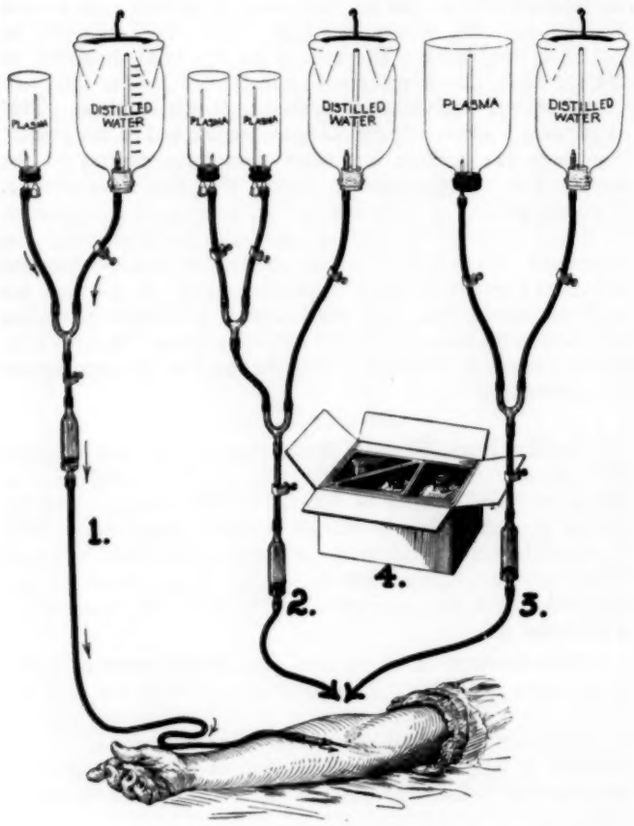
and equally hard to keep sterile. Most reactions to date, as reported by various workers, show that the fault lies in the water used for reconstruction; a pyrogen free sterile water is not the easiest commodity to make.

3. An intravenous needle, size 20; anode rubber tubing of Y design; mechanical filter, and drip chamber; 1 inch number 18 needle attached to the other short arm of the Y tube. This is packed in a sterile manner with the needles being protected by enclosure in a test tube. This segment is united, sterile and ready to use.

4. Four inch number 18 spinal type needle with stylet in sterile test tube.

METHOD OF ADMINISTRATION

The corrugated cardboard container is slit open with a knife along the designated line. The contents are removed and, if no table is available, the cardboard box can be up-ended and used for a table. Any improvised stand can be used to suspend



Emergency transfusion kit.

the bottles; on board ship or in a hospital ward these are always available. If no such stand is available because of an exposed position, use can be made of a sapling, a tent stake or even a gun-stock with the bayonet stuck firmly into the ground. The rate of flow can be accurately gaged by the turn-screw petcock, so that the height of the object used to suspend the bottles plays little role except for support. The tin can is carefully opened by the usual type of can opener, but care is needed to make sure the can is opened at the designated end to avoid damage to the glass bottle. On sliding the glass bottle out of the can, one should place a piece of cotton well soaked in either iodine or alcohol on the rubber vaccine stopper of the dried plasma flask to sterilize the rubber cap. The sealing ring of the 500 cc. sterile water bottle should be undone, but the cap itself must not be taken off until everything is in readiness for the transfusion; i. e., after the arm area of the recipient has been cleansed at the cubital site and the tourniquet or sphygmomanometer cuff placed about the arm but not tightened.

When all is in readiness, plunge the number 18 1 inch needle attached to the short arm of the Y tube just through the vaccine stopper into the powder plasma flask, insert the glass nozzle of the other end of the Y tube through the proper designated hole in the rubber cap of the sterile water bottle (after first removing the cover), holding the cover by the edge to prevent contamination of the underlying rubber insert. Insert the number 18 4 inch spinal type needle alongside the needle already piercing the rubber stopper of the dry plasma flask. This needle is to break the vacuum in the bottle during the reconstruction process and administration and is long enough to clear the fluid. Clamp off with the screw-cock the tube running to recipient's needle; up-end the bottle containing the sterile water so that approximately 100 to 150 cc. flows into the bottle containing the dry plasma; gently agitate this bottle to facilitate reconstruction and dissolving of the plasma residue. The dry plasma or serum will dissolve in a few seconds. When the plasma is completely dissolved, up-end both bottles and allow some water from the 500 cc. flask to run through the tubing; get rid of all air bubbles in the tubing by raising and lowering both bottles several times. The anode rubber permits bubbles to be seen. Another method, after the plasma has been dissolved, is to lower the water bottle, lift the reconstructed plasma bottle and allow the plasma to flow into the water container, from which it will flow to the recipient. This method will not, however, allow for varying the concentration. Tighten the arm band on the recipient and insert the sterile needle into the vein; release the tourniquet pressure as soon as the vein is entered. Gage the rate of flow by the visual drip chamber. Reconstructed plasma may be given rapidly, so that 500 cc. will run in within twenty minutes. This is due to the fact that a person who needs fluid and plasma protein badly will absorb it quickly. If the person requires another bottle of reconstructed plasma, repeat the procedure with another type kit but stick the new recipient needle into the rubber tubing (after cleansing with alcohol) which is already set up and running distal to the mechanical filter and drip chamber of the original setup. In this way, fluid and plasma protein representing 1,000 cc. of whole blood can be given quickly, simply and with the full knowledge that the emergency kit will deliver the plasma proteins to the patient in a sterile manner at a time when they will do the most good. (See sketches also for larger quantity transfusion.)

CONCLUSION

A new emergency transfusion dry plasma kit has been devised. It will adequately meet conditions imposed on it by modern warfare. It will fill a long standing need in civilian life and practice; smaller hospitals, emergency stations, fire houses, industrial factories, oil refineries and forestry outposts should keep such a kit or kits in their emergency lockers. Armed forces ashore and afloat will require large numbers of these or similar kits. They will enable transfusion therapy to be moved to more advanced positions in actual warfare; smaller vessels will have transfusion facilities for their wounded. Gun flash, explosion and incendiary bomb burns will now be treated in the first critical hours.

The financial cost of these kits is small when the life saving properties are considered. The federal government may find it advisable to produce and dispense such units. Our civilian population must realize that its part in the national preparedness program will be to supply blood voluntarily for national defense needs; this is the least it can do to pay for its protection. Such a widespread program would guarantee a constant and adequate supply of dried blood plasma.

Modern warfare with its terrific toll on civilians and armed forces alike make it mandatory to provide for, to protect and to treat as quickly as possible all persons requiring blood transfusions. The emergency transfusion dry plasma kit will provide a strong therapeutic weapon for our medical services.

Two modifications of the original unit are shown. Each one has its special merits.

Special Article

LEGAL RESPONSIBILITY FOR MEDICAL MALPRACTICE

V. FURTHER INFORMATION ABOUT DUTY AND DERELICTION

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This is the fifth of a series of six articles on "Legal Responsibility for Medical Malpractice." The four previous articles were published in The Journal March 8, May 10, May 31 and June 14, respectively.

In a previous article in this series I proposed a comprehensive formula by which one may judge the legal sufficiency of any malpractice claim. This includes four essential components which must all be present concurrently: duty, dereliction, direct causation and damage. Before a plaintiff can make out a prima facie case of malpractice, he must prove each of the four by sufficient evidence to support fact findings by a reasonable man. If he fails to meet this burden of proof, he is not entitled to go to the jury, but the trial court is duty bound, on timely motion, to instruct a verdict for the defendant.

I. DUTY

Now that I have put forward the proposed formula in its simplest form, the reader may profit by a partial unfoldment of the four telescoped concepts. I shall begin with the crucial question of duty. Certain questions in respect to duty should always be asked in appraising each new situation of alleged malpractice. They are:

1. Did a duty arise under the circumstances?
2. Did the scope of duty extend far enough to make the medical conduct complained of a legal dereliction?
3. Had the duty, though once existent, been extinguished before the alleged dereliction occurred?

These inquiries present separate legal questions. If the physician can establish an adverse answer to any one of the three, he will defeat the plaintiff's proof of duty and thus prevent his making out a case of malpractice. These telescoped questions thus stand as main principles in the exploration of duty and, by giving orientation, may protect the reader from bewildering minutiae.

1. Did a Duty Arise Under the Circumstances?

To meet this question, which stands at the threshold of every problem of medical malpractice, one must know the possible sources of duty.

Contract Basis of Duty.—It was a favorite practice of early English precedents and indeed of many American decisions to seek the origin of duty in contract. True, a physician does not take with him a pad of blank forms in fine print or say to his patient at the other end of the telephone wire: "I'll be over, old man, just as soon as my lawyer can draw up a contract." Nevertheless, modern law has parted company with the old view founded on rules of the English College of Physicians, that a physician's services represent an honorarium and so he cannot sue for fees. Despite lack of formal bargaining, the usual medical engagement is an implied agreement containing the requisites of any binding contract: offer, acceptance and consideration. The undertakings assumed are sufficiently definite and certain, even though implied, and the contract is legally binding if both parties are competent, that is, not under some such disability as minority or insanity. When a patient summons his physician, he impliedly agrees, in the event his offer of employment is accepted, to follow the reasonable instructions his physician lays down and to pay the fair value of the medical services rendered. The physician, in turn, by saying that he will answer the call, accepts this offer of employment and, by way of consideration, impliedly promises to attend with diligence until the case is properly terminated and warrants that he possesses and will apply average knowledge, judgment, care and skill.

Tort Basis of Duty.—Even in the early cases, the courts began to make it clear that the physician under such employments had a liability to the patient even if the latter was a stranger to the contract and therefore without standing to sue for its breach. Such, in fact, was the dictum laid down by Lord Coke, chief justice of England, in the pioneer case of *Everard* v. *Hopkins*, in 1615, (Court of King's Bench, 2 Bulst. 332; 80 E.R. 1164). The case concerned a servant who had been hurt by a cart wheel. His master employed the defendant physician to treat the wound. Coke held that for injury occasioned by negligent treatment the servant was entitled to his separate "action on the case" for damages. The duty owed to the servant in such a case does not arise from contract, for the master and not the servant hired the medical practitioner. It springs rather from the affirmative act of the physician in entering on the physician-patient relationship. This origin of a duty of care toward a perfect stranger is not a novel concept. The law of torts,[1] of which the law of negligence is one branch, does not require a person to act toward a stranger. So long as the choice remains unexecuted, the prospective actor may act or not, as he pleases; he is a so-called volunteer. Though he has no preexisting obligation to act or change the status quo, if he voluntarily assumes to do so he becomes at that very instant subject to a legal duty toward the object of his ministrations, to see that his conduct does not carry an unreasonable risk of harm.

The next step in explaining the patient's immediate rights against his physician was legal recognition that a medical dereliction constitutes a "tort" as well as a breach of contract. Hence, even though the patient himself employed the physician, he might elect to consider mala praxis either as a breach of contract or as a "tort" and make either ground the basis of a legal action. If he adopted one theory of recovery in his pleadings, he was held to that theory and the remedies and rules of law which went with it ("theory of the case" decisions).

More recently, the courts have recognized that the law of torts properly governs the usual case of medical malpractice and that if a plaintiff pleads the contract

1. A "tort" is a wrongful invasion of some right of personality or of property of another, causing injury in respect to which the law will give redress by money damages without proof of any contractual or consensual relations between the actor and the person acted on. Tort law might be characterized as the sum total of those legal prohibitions whereby the sphere of individual existence is protected from negligent, intended or malicious conduct of strangers. "The law of torts" is thus a generic term covering a wide variety of such wrongs, including "assault," "battery," "trespass, "conversion" (wrongful appropriation of another's personal property), "false imprisonment," "malicious prosecution" for a crime not committed, "slander and libel," "negligence," "fraud or deceit" "breach of trust," a stranger's act in "inducing breach of contract, "malpractice" of a professional man, violation of patents, trade-marks, copyrights or other vested property rights, "unfair competition" in business and other such proscribed conduct. It is through this branch of the law that such individual rights have received greatest legal protection and the citizen has been insured against unnecessary risks of injury in a crowded society.

of employment it is generally only to show the source of duty. This can be illustrated with cases.

DUTY ARISING FROM CONTRACT

1. No duty rests on a physician to accept an employment. He may refuse arbitrarily to engage his services (*Hurley* v. *Eddingfield* [Ind. Supreme Court], 1901, 156 Ind. 416, 59 N.E. 1058, 83 Am. S.R. 198, 53 L.R.A. 135).

Example.—Hurley, an administrator of Charlotte Burk, deceased, sued Eddingfield for $10,000 damages for wrongfully causing the death of his intestate. In his complaint the plaintiff alleged that:

> At, and for years before decedent's death, Eddingfield was a practicing physician at Mace, in Montgomery County, duly licensed under the laws of Indiana. He held himself out to the public as a general practitioner of medicine. He had been Charlotte Burk's family physician. She became seriously ill and sent for him. The messenger informed Eddingfield of decedent's violent sickness, tendered him his fee for his services, and stated to him that no other physician was procurable in time and that decedent relied upon him for attention. No other physician was procurable in time to be of any use, and decedent did rely on appellee for medical assistance. Without any reason whatever, appellee refused to render aid to decedent. No other patients were requiring appellee's immediate service, and he could have gone to the relief of decedent if he had been willing to do so. Death ensued, without decedent's fault, and wholly from Eddingfield's wrongful act. The alleged wrongful act was appellee's refusal to enter into a contract of employment.

Defendant filed a "demurrer" in the trial court. "Defendant demurs to each and singular of the plaintiff's allegations and says that same are insufficient in law to state any cause of action." The demurrer is a pleading device by which a party, in advance of trial, can test the sufficiency of his opponent's pleadings. Its effect is to say: For purposes of the pleadings but not for trial, all your allegations are admitted to be true, yet they still fail to set forth facts stating any cause of action recognized by law.

The trial court sustained the demurrer and on plaintiff's failure to amend his pleadings entered a judgment dismissing the case. The Supreme Court of Indiana, through Justice Baker, affirmed the judgment, saying:

> The act (Medical Practice Act, 1897) is a preventative not a compulsive measure. In obtaining the state's license (permission) to practice medicine, the state does not require, and the licensee does not engage, that he will practice at all or on other terms than he may choose to accept. Counsel's analogies, drawn from the obligations to the public on the part of innkeepers, common carriers and the like, are beside the mark.

This was the rule at common law before the medical practice acts, and it continues to be so today. The rule at first may appear inhumane, but the law prefers trusting the moral sensibilities of the physician to making him subject to dictation and exploitation by the laity. Imagine the intolerable situations which might arise if the patient could say for the physician whether the case lay within his range of interest or qualification or might be handled in the time available. Such a rule would strip the physician of the rightful control of his medical engagements and make him a menial in the hands of the uninformed.

2. When a physician accepts an employment and then fails to enter on it, with no adequate excuse, his liability is for breach of contract rather than in tort.

Example.—X agrees to attend Y in childbirth for $25, to be paid by her husband. Y sends a messenger for X when labor pains begin, but he does not come. He is liable, not in tort for negligent performance of the physician-patient relationship, but for breach of contract in failing to establish that relation as agreed.

DUTY ARISING FROM TORT PRINCIPLES

Voluntary undertakings gratuitously assumed raise a duty of medical care in respect to the patient.

1. Duty in respect to "good Samaritan" cases arises only in event the physician elects to proffer medical aid.

Example.—Physician X is passing along a lonely road when he sees the victim of a collision lying sorely wounded by the way. He fails to stop and render aid, which would have prevented a subsequent complication. The injured man files suit against him for professional negligence. X is entitled to an instructed verdict, for he owed no duty to act.

An omission to act cannot constitute negligence, and thus a tort, unless there was some prior duty resting on defendant to act in protection of the other's interests. In cases of the character described, the law places no duty on the stranger to render aid; it is an obligation which is left to the moral judgment of the passer-by.

2. Duty arises when one assumes to treat a gratuitous or charity patient.

Example.—Physician X is a physician in the outpatient department of a city hospital. In treating Y, he negligently inflicts an injury, for which Y sues. X defends on two grounds: (1) that he was acting in the premises only as an employee of the hospital, which, being a municipal institution, is exempt from suit except by its consent and (2) that Y cannot exact a duty of care from the physician such as the law implies in case of employments for gain but receives the gratuitous treatment burdened with any risks of injury.

Neither of these defenses is good. As to the first, the immunity to suit which a municipality enjoys does not extend to its servants, who remain personally responsible in law for their individual torts, even though committed in the scope of their employment. The second contention fails because though a physician may decline to treat a patient gratuitously, if he elects to do so the voluntary assumption of the undertaking raises a duty, under the law of torts, to execute the matter with due care and skill. It is the law that such duty of care is the same as that owed to a paying patient. The relationship may differ in respect to the mode of termination and in the wider latitude in delegating phases of the medical care.

3. On principle, the duty of a physician who assumes to act in a "good Samaritan" case is analogous to that arising from the treatment of gratuitous patients.

Example.—Physician X stops by the side of a busy road to help an injured man, who is unconscious. He tells the surrounding crowd that he is a physician and will take charge. In rendering first aid, he negligently compounds a simple fracture and introduces infection. On proper proof, he is liable, the case being like that of the voluntary treatment of a charity patient. It can be argued that in "good Samaritan" cases the physician should be held to no higher duty of care than a layman, especially when the injured person is unconscious and so cannot be relying on the professional status of the actor. In the case stated, X is assuming charge of the situation as a physician and causes the onlookers to relax diligence in getting the injured man into another physician's hands. Even if the usual rule is applied, that a volunteer's duty in a "good Samaritan" case is only to see that his action does not leave the injured man in a worse condition than when he found him, this very thing has occurred if he displaces available, competent medical care with negligent treatment.

Thus a different result might obtain if the injured man were found on a forsaken mountain road where, if unattended shortly, he would have died from freezing. In this case it can hardly be argued that the physician, by assuming control and applying negligent treatment, has displaced the injured man's likely prospect of competent care. Rather than displacing able medical attention by negligent care to the patient's detriment, the actor has substituted a compound fracture for death. Thus, I believe the proper rule in "good Samaritan" cases is that the physician who assumes to act will be held to the standard of care exacted from physicians. Yet, though he is under a higher duty than a layman and he breaches this duty by committing a negligent act, he may be immune from more than nominal liability in many instances because of failure to prove "damage" (one of the essential four D's of the formula: duty, dereliction, direct causation and damage). In those instances the net effect of his intervention has been to leave the patient in a better or safer position than when he found him. There is undoubted negligence (or dereliction) in the insufficient performance of the voluntarily assumed action, but in showing what his position would have been in absence of the defendant's intervention, in seeking to prove damages, the plaintiff's evidence would disclose that his life at the time of the gratuitous act had but minutes or hours to run.

I do not want the physician to believe that he assumes a heavy risk when he helps such a person in distress. Practically, the risk is almost nonexistent; the patient in such circumstances is not apt to press a claim against his benefactor, and juries are apt to be still slower to return fact findings of negligence. Yet, such situations may occasionally arise, and their legal bearings have an inescapable intrinsic interest.

DUTIES CAST BY STATUTE OR ORDINANCE

X is a public health officer charged by statute with the duty of examining persons suspected of having contagious disease, preliminary to isolating them in appropriate city hospitals. A general practitioner reports Y as such a suspected person. X omits to examine and isolate Y, and as a result, Y's eight brothers and sisters contract diphtheria. It is likely that Y's parents have a cause of action against X on the ground that the statute raises a duty intended to ensure protection to not only the public generally but to those members of it specifically affected by its breach.

The sources of duty are summed up and analyzed in table 1.

One can see that once the physician-patient relationship arises in fact, by actual entry on it, certain minimum duties attach by law. They are the same whether one traces them to an implied warranty in the contract of employment or to the duty of care which the law of torts impresses on the "volunteer" to see that his affirmative conduct does not carry unreasonable risk of harm to those who might be injured by negligent performance. The tort theory is a more fundamental basis than contract for explaining this "relational" duty, since it accounts for the duty owed in treating a patient who is unconscious or of unsound mind and therefore incapable of "consent," for the duty owed the patient who is a stranger to the contract of employment, for the duty which arises in treating the gratuitous or charity patient, who gives no consideration for a contract, and lastly, for the obligation of care and skill in "good Samaritan" cases, in which the physician bestows medical attention without prior legal duty or contractual relationship.

TABLE 1.—*Sources of Duty*

	Actual Entry on Physician-Patient Relationship	
I. Antecedent Duty to Act		
1. Contract, expressed or implied—Raises contract duty to establish physician-patient relationship. If physician fails or refuses to establish the relationship, plaintiff may sue for breach of contract	→ Duty to establish physician-patient relationship	(×) Assumption to act makes source or existence of prior duty immaterial; duty of care and skill arises under law of torts from the affirmative action toward the patient; questions of malpractice in performance present tort problems
2. Duty cast by statute or ordinance—If physician fails or refuses to establish the relationship, he probably breaches a duty extending by statutory intent to the injured plaintiff and is responsible civilly in tort for damages arising from his failure to act	→ Duty to establish physician-patient relationship	(Duty arises) Same result as (×)
II. No Antecedent Duty to Act		
1. Physician declines, even arbitrarily, to engage his services	→ No duty to establish physician-patient relationship	(Duty arises) Same result as (×)
2. Petition of gratuitous patient for treatment	Response of physician lies within his discretion	
3. Appeal of injured person by wayside ("good samaritan" cases)		
III. Conclusions		
1. Failure to act can constitue negligence or a medical dereliction only when some preexisting duty to act is owed to the prospective patient		
2. Irrespective of any preexisting duty, once medical care is undertaken the law raises a uniform duty of care and skill in favor of the patient		

Where, then, is the contract of employment of any legal importance? the physician may ask. Briefly, it is most significant as an instrumentality by which physician and patient may regulate their relationship in directions not forbidden by law.

1. The contract of employment secures to the physician legal rights of compensation: (1) If the contract is implied, the patient is held to pay the reasonable value of the services rendered. (2) By valid express agreement (certain in terms, between competent parties and not procured by fraud, coercion or undue influence), the compensation to be paid may be fixed at any figure the parties agree on, without reference to reasonableness.

2. The contract casts a duty on both parties to establish the physician-patient relationship at a future date. A patient can thus secure in advance of treatment the assurance of care by a man whose services are in

extreme demand, such as a specialist in respect to a delicate operation. Dependable engagements contracted in advance enable the physician to arrange his schedule with more certainty.

3. The contract affords a means of adding to, and perhaps subtracting from, the requirements of knowledge, judgment, care and skill otherwise fixed by the law of torts. Normally, these are fixed by reference to the quantum possessed and exercised by the average practitioner in the same community, and it is the duty of the physician to bring this standard of attainment and performance to the case at hand.

If my view is sound, the law of torts, which imposes this duty, in effect says: The law is interested only in assuring to the patient "average attention." If the parties, by express agreement, wish to assume superadded duties, well and good, but failure to perform these *extraordinary* obligations or their imperfect execution is a mere breach of contract; it is not also a tort unless the dereliction involved infringes as well the lesser duty of "average" care imposed by the law of torts.

4. If a contract exists, it may well be that the patient has bargained for the personal skill of the particular physician in the performance of various functions. Under the law of contracts, such personal duties are nondelegable except by the express consent of the affected party.

5. A relationship arising by contract may require different means for its rightful termination.

6. Whether the patient's rights depend on a breach of contract or on a tort is not a scholastic quibble or immaterial question of procedure. Some practical consequences hang on the answer, and these are worthy of consideration.

(1) Under "wrongful death statutes" the cause of action against the physician survives the death of the patient if it springs from a tort but not if it depends on mere breach of contract. At common law, when a person was injured by the wrongful act of another but died before an action could be brought or tried, his claim was thereby extinguished. In brief, there was no liability at common law for negligence which resulted in the death of the injured person. This rule was changed in England by Lord Campbell's act (the Fatal Accidents Act, 1846, 9 and 10 Vict. c. 93), which in effect provided that the claim for wrongful death should not be extinguished by the premature demise of the injured person, but should be preserved to his legal representatives.[2] Most American states have passed "wrongful death statutes," using the same or similar language, to carry out in this country what was recognized as an exemplary reform.

The decisions hold that if a complaint in respect to alleged malpractice shows only a breach of contract, it will not support an action for the patient's death brought against the physician under the "wrongful death statute"; if it shows a tort, the action is preserved within the intent of the statute. In the first case the aggrieved party is confined to a mere action for breach of contract which survives to legal representatives under independent doctrines of law.[3] So, again, one finds it a pragmatic inquiry to ask: was the "wrong" merely a failure to establish the actual relationship of physician and patient as promised in the contract of employment (breach of contract), or was the wrong a dereliction occurring after actual initiation of treatment (and hence a tort)?

(2) If the injured patient in his claim of medical dereliction can show only a breach of contract, the jury cannot assess punitive damages; if he can show a tort extreme enough to constitute gross negligence, the injured patient is entitled to have the jury assess punitive or exemplary damages.

Example.—Y, being near full term, has her husband engage the services of X, an obstetrician, to conduct the labor for a stipulated fee of $25. Pains having set in, Y sends for X. Without adequate excuse, X fails to come, by reason of which Y suffers preventable pain and injury. Y can recover actual but not "punitive" damages. American law permits a jury to award the latter by way of example or punishment when the medical conduct is grossly negligent, wanton or reckless. Such damages are not allowed in respect to mere breach of contract, however unwarranted the refusal to perform. The case stated is one of breach of contract to establish the physician-patient relationship, not one of malpractice (tort) under the relationship.[4]

Example. — Y, needing dentures, consults X, a licensed dentist, to have his teeth removed and plates prepared. Under X's supervision and instructions, B, a person without adequate knowledge, skill or experience and without a license, commits gross negligence in extracting a part of the jaw bone under the supposition that he is removing a root. The fracture of the jaw bone is a tort, and Y may recover punitive, as well as actual, damages from X (*Mandeville* v. *Courtwright* [U. S. C. C. A. Pa.] 1905, 142 Fed. 97, 73 C. C. A. 321, 6 L. R. A. [N. S.] 1003).

If my analysis of the source of duty is applied, one sees that these 2 cases are reconcilable. Though in the second case a contract of employment exists, the entering on the physician-patient relationship has also occurred, giving rise to duties of care sounding in tort. The breach of these duties constitutes a tort, in this case amounting to that gross negligence on which "punitive" damages may be assessed, and the patient does not need to go back to the contract of employment for the source of her rights.

(3) There may be questions as to which statute of limitations shall apply. Early in the history of the common law, it was found that persons with weak or doubtful claims often waited to assert them until the prospective defendant had lost the evidence for his defense by lapse of time or through the death of valu-

2. This act has been further broadened by subsequent amendment: Fatal Accidents Act, 1864, and Fatal Accidents Act, 1908.

1. "When death is caused by negligence, an action shall be maintainable. Whensoever the death of a person shall be caused by wrongful act, neglect, or default, and the act, neglect, or default is such as would (if death had not ensued) have entitled the party injured to maintain an action and recover damages in respect thereof, then and in every such case the person who would have been liable if death had not ensued shall be liable to an action for damages, notwithstanding the death of the person injured, and although the death shall have been caused under such circumstances as amount in law to felony."

2. Action is to be for the benefit of certain relations and to be brought by the executor or the administrator of deceased. "Every such action shall be for the benefit of the wife, husband, parent, and child of the person whose death shall have been so caused, and shall be brought by and in the name of the executor or administrator of the person deceased; and in every such action the jury may give such damages as they may think proportioned to the injury resulting from such death to the parties respectively for whom and for whose benefit such action shall be brought; and the amount so recovered, after deducting the costs not recovered from the defendant, shall be divided amongst the before-mentioned parties in such shares as the jury by their verdict shall find and direct."

3. Action is to be commenced within a year. . . . provided always, that not more than one action shall be for and in respect of the same subject matter of complaint and that every such action shall be commenced within twelve calendar months after the death of such deceased person.

3. *Braun* v. *Riel* (Missouri Supreme Court) 1931, 40 S. W. (2d) 621, 80 A. L. R. 875; *Thaggard* v. *Vafes* (1928) 218 Ala. 609, 119 So. 647.

4. *Hood* v. *Moffett* (Mississippi Supreme Court) 1915, 109 Miss. 757, 69 So. 664, Ann. Cas. 1917 E, 410.

able witnesses. To remedy this, statutes of limitation were passed,[5] which provided in effect that various grievances must be sued on within a certain time after the cause of action accrued or be forever barred.

This intended purpose to bar stale, and often fraudulent claims and to exact diligence from an aggrieved party has been embodied in the statutes of limitations of the several states. The statutes covering breach of contract give to the injured party a much longer time for filing suit than do those covering tort actions. For contracts, the period usually varies from two to six years, depending on whether the contract is oral (shorter) or written and on the particular state; for torts, the period of limitation varies from one to two years after accrual of the cause of action.

Example.—X, a surgeon, under a contract of employment, operates on Y. Three years later Y sues X for malpractice in negligently leaving a sponge within the wound, a fact discovered six months after the operation. X, by way of defense, pleads that the suit was filed more than two years after the cause of action accrued and so is barred by the statute of limitations. Y maintains that he had the operation under a contract of employment and that consequently his action against the surgeon is for breach of contract, is governed by the four year statute of limitations and is therefore filed in due time.

The courts of most jurisdictions have held that the injury is a tort despite the existence of a contract and so is governed by the shorter period of limitations. This doctrine is favorable to physicians and works to their advantage in defense of malpractice actions.

2. Assuming the Duty to the Patient Which the Law Implies, What Is Its Scope and Mode of Measurement?

On this vital subject, again I shall put the goal of orientation before the ideal of definitive treatment. Many of the principles to be mentioned afford focal points for radiation into extremely important medicolegal problems.

1. NATURE AND SCOPE OF THE DUTY OWED

A physician is required to possess and apply to the conduct of the case such knowledge, judgment, care and skill, in respect to both diagnosis and treatment, as the average physician in the same or similar communities and in the same line of practice would use under like circumstances in light of the existing state of the science.

Failure to Apply Professional Equipment as Common Denominator of Malpractice.—It is the failure to apply this professional equipment which is the vital concern of the law, whatever is the cause of the deficient performance—negligence, intentional disregard or deficient knowledge or skill. Failure to apply the required professional qualities is the common denominator of all malpractice cases.

Misfeasance and Nonfeasance.—A dereliction constituting negligence may consist of an affirmative act ("misfeasance"), or it may consist of an omission to act when good practice would require action ("nonfeasance").

Performance to Meet Standard of "Average Physician."—The law takes as its standard the "average physician"; it does not hold the practitioner to the endowments of genius or even to the standards of the superior practitioner. It does not require him to "do his best," for this is a subjective standard, and though put forward as a test by one or two early cases, it has been abandoned in the later decisions. Such a test would be a cloak for the earnest ignoramus or the sincere person devoid of skill, while making the surpassingly good man liable for performances short of his best, though they were superior to the peak performances of his fellows. The law clings to an objective standard. It also relishes the idea of leaving a margin of initiative to the enterprising, represented by the difference between their personal standards and the much lower "average" standard below which the law first attaches liability.[6]

Standard Fixed by Expert Testimony as to Local Practice.—The standard of acceptable medical practice is established by expert testimony as to the local practice. The physician in a small town or rural community is judged by the level of attainment of his fellows; this is regarded as fair on the ground that they have had like opportunity for experience. Evidence is not admissible to show that his conduct would be considered negligent according to the practice of the "Mayo Clinic" or of other large medical centers.

On the other hand, should he be enterprising enough to apply some proved method newly established by such a center, will the court forbid his bringing in an authoritative expert witness from afar, on the ground that such a physician cannot be familiar with the level of local practice? Some writers on law have implied that such might be the case. This contention I believe to be a mistaken one. Its effect would be to turn against a malpractice defendant a rule invented for his protection. I think the law would permit him to prove by such authorities the propriety of the treatment used, particularly when the question is purely: What is good medicine? He would thus be enabled to counter adverse testimony of less progressive local practitioners who from one motive or another might dislike his innovations. I have not found a specific case dealing with this precise point, but the logic is too strong for the law to deny. Society is interested in having practitioners in remote places adopt proved advances, and a contrary rule would work an undeserved hardship on a progressive physician who chanced to settle among quacks or timid innovators. The true rule probably is that expert testimony cannot be imported from larger centers to charge the defendant physician with a higher duty of care than is current in his own or similar communities, but it can be brought to his aid to rebut a charge that he has acted rashly in his choice of treatment or procedures.

Standard Fixed by Reference to Practitioner's Own Class.—A further illustration of the notion of judging like by like is the rule that a general practitioner's performance is to be judged by the attainment level of the general practitioner, and probably the performance of an intern is to be judged by that of the "average" intern. This "class" system in respect to the standard of care which is applicable is of great importance to young medical graduates. If they leap directly into

5. Statute 21 Jac. 1, c. 16, 1623.

6. An interesting consequence follows from the fact that the duty imposed springs from the law of torts and is uniform as to all members of a particular class of practitioners. This is the ruling that self aggrandizement does not increase the duty of care. Thus, in *Schireson v. Walsh* (Illinois Supreme Court) 1934, 354 Ill. 40, 187 N. E. 921, it was held that a physician who proclaimed himself one of the greatest and most skilful plastic surgeons in the world did not thereby become subject to a higher requirement of skill and ability than is expected of the average physician in determining the question of malpractice.

practice, they assume at once the full duty of the practicing physician; if they become interns, they have a lesser duty while acquiring the "average" skill which only experience can supply. Specialists are judged by average practice of fellow specialists. This is held to be just because the specialist holds himself out as having superior equipment in his limited field, and he charges a correspondingly higher fee to the patient.[7]

An interesting case could arise as follows: Suppose a physician who specializes in the treatment of fractures is going along a road when he sees an unconscious man who has been sorely injured in a collision. He stops to give aid but does not simply splint the limb. He sets the fracture in a way which would be "due care" if done by a general practitioner but is negligent according to the standard of specialists. The unconscious man could not be submitting to treatment in reliance on the supposed superiority of the specialist. It is submitted, therefore, that X would not be liable in an action for malpractice. Such a principle might well be of considerable moment when a specialist acts in a nonconsensual transaction of the character described. If this view is accepted by the courts, they should likewise hold that the specialist can recover only what would be fair compensation to a general practitioner for the service rendered.

Suppose, instead, that X has the injured man, Y, sent to his clinic. On regaining consciousness, Y continues to accept the services of X in reliance on information that he is in the hands of a specialist. The duty of care and the scale of compensation at once revert to the higher level of the specialist.

In Respect to Treatment but Not in Respect to Diagnosis, Practitioner Judged by Principles of His Own "School of Medicine."—The duty of the physician is only to treat according to the principles of his "school of medicine." It is the view of American courts that a patient cannot expect the advocate of one system of medicine to apply the precepts of another. The "school of medicine" doctrine does not, either in reason or under the prevailing legal view, extend to diagnosis. Identification of the illness presents a common scientific question which all schools must answer if their varying treatment is to be directed toward an actual, as opposed to an imaginary, malady.

Duty of Care Is Proportioned to Time, Place and Circumstances.—The duty of care is proportioned to the time, the place and the circumstances. The emergency amputation of a gangrenous leg on a kitchen table under a kerosene light might represent the highest degree of due care in a backwoods cabin, but if primitive conditions were used in a modern hospital the case would get to the jury on a charge of negligence.

Thus, regard must always be had to the particular emergencies under which the physician acts, the instrumentalities at hand and the alternative courses he has available.

Treatment Must Conform to the Modern State of the Science.—Some physicians believe, but quite erroneously, that any treatment is permissible which once has had the approval of medical science. Such is not the case. The law does not proscribe what is old; if some measure used by Hippocrates is still good medicine, it may be used with impunity. But a duty lies on the physician to conform his practice to the "modern state of the science." He may, therefore, be negligent in using an obsolete method no longer employed by the average practitioner. He might cite the court by book, page and verse authoritative statements from the middle ages that one may judge a specimen of urine by looking at it, but visual examination would not be taken in lieu of a Benedict test for sugar. Physicians are therefore under a legal duty to keep apprised of major developments and abandoned doctrines—a stricture which may console medical students.

Physician Is Entitled to Choose Among Currently Sanctioned Methods of Treatment, Without Liability for Failure to Use the Method of Choice.—In respect to the choice of treatment, it is the law that a physician cannot be held negligent for using a less desirable treatment than the one of choice if both have current medical sanction. Testimony of other physicians that they would have done otherwise is therefore not enough to make out negligence; they must be willing to say that what defendant did or failed to do was improper in the light of average practice. The right of the physician to choose between alternative methods is jealously guarded by the law.

2. "ERROR OF JUDGMENT" AS A DEFENSE TO ALLEGED MALPRACTICE

Further confusion has existed in respect to so-called "error of judgment" as a perfect defense to an action of malpractice. It is indeed true that the law does have a high regard for the untrammeled exercise of professional judgment. This it looks on as one of the most important prerogatives of the professional status. Nevertheless, the law will not permit the doctrine of "error of judgment" to be misused as a cloak for professional dereliction.[8]

For example, suppose a physician comes into the room of his patient, sniffs a few times and, without laying a hand on him, enters a mistaken diagnosis. Suppose further that percussion, inspection of signs and taking a clinical history would have led him right. In such case it is no answer to a charge of negligent diagnosis for him simply to say that he made an "error of judgment." Yet, in its proper scope, the doctrine of error of judgment is important. Originally invented

7. The basis of the rule is stated clearly in *Baker* v. *Hancock* (1902), 29 Ind. App. 456, 63 N. E. 323, 64 N. E. 38. "It is averred in two paragraphs of the complaint that the appellee 'was making a specialty of the treatment of cancer, and held himself out to the public as a specialist of said disease of cancer, by advertising in the public press, and by other public notices thereof.' A specialist, as the term is here used, is understood to mean a physician or surgeon who applies himself to the study and practice of some particular branch of his profession. Scientific investigation and research have been extended and prosecuted so persistently and learnedly that the person affected by many forms of disease is of necessity compelled to seek the aid of a specialist in order to secure the results thereof. The local doctor in many instances himself suggests and selects the specialist whose learning and industry have given him a knowledge in the particular line which the general practitioner, in rural communities especially, has neither time nor opportunity to acquire. . . . Being employed because of his peculiar learning and skill in the specialty practised by him, it follows that his duty to the patient cannot be measured by the average skill of general practitioners. If he possessed no greater skill in the line of his specialty than the average physician, there would be no reason for his employment; possessing such additional skill, it becomes his duty to give his patient the benefit of it. The appellee, if he held himself out as a specialist in the treatment of cancer, was bound to bring to the discharge of his duty to patients employing him, as such specialist, that degree of skill and knowledge which is ordinarily possessed by physicians who devote special attention and study to a disease, its diagnosis, and treatment, having regard to the present state of scientific knowledge. . . . This is the degree of skill which, by holding himself out as a specialist, he represented himself to have; and it does not lie with him to assert, after securing employment and compensation on that basis, that his representation was not true."

8. In *Schumacher* v. *Murray Hospital*, 1920, 58 Mont. 447, 193 Pac. 397, the Supreme Court of Montana quoted with approval this passage from *West* v. *Martin* (Supreme Court of Missouri), 1861, 31 Mo. 375, 80 Am. Dec. 107: "whether errors of judgment will or will not make a surgeon liable in a given case depends not merely upon the fact that he may be ordinarily skilful as such, but whether he has treated the case skilfully or has exercised in its treatment such reasonable skill and diligence as is ordinarily exercised in his profession. For there may be responsibility where there is no neglect; if the error of judgment be so gross as to be inconsistent with the use of that degree of skill that it is the duty of every surgeon to bring to the treatment of the case according to the standard indicated."

to protect the surgeon or physician, who at times must act almost instantly in emergencies without prior leisurely investigation of all the material facts, it still finds its chief application to those situations.[9]

When time and opportunity exist, the law requires the physician to employ his fact-finding powers, in accordance with "average" practice, before he exercises his judgment. Scientific tradition dictates that medical decisions must be grounded on objective facts when ascertainable. It is an enlightened judgment which is wanted. If the physician has thus previously gathered his facts with due diligence and they are susceptible (per "average" standards) of more than one interpretation, he is not negligent if he falls into error in adopting one of the possible interpretations. If the facts are 2 and 2, the answer can only be 4, and he is negligent if he finds otherwise; but if the facts are 2 plus 2 or 3, this second digit being blurred to the "average" practitioner even after due investigation, he is not negligent if he finds the answer to be either 4 or 5. The "error of judgment" doctrine, therefore, protects the untrammeled exercise of judgment against charges of negligence in certain cases, even when it results in mistaken conclusions, as for instance when:

1. A surgeon acts in an emergency, as in the foregoing example, and the action he takes on the supposed necessities is not of itself negligently performed. In this case it is the judgment of the physician as to *what* the facts are that is protected, and he is safe if he conforms his treatment thereto and applies it with due care and skill.

2. A physician satisfies his fact-finding obligations and applies average judgment to the interpretation of equivocal facts, or he applies average judgment in choosing among possible diagnoses or conclusions to which *unequivocal* fact findings may point.

In the latter case, the situation, after investigation with due care, may be found to be:

(1) The facts are A, B, C and (D? or E?). He may be forced to decide, by using "average" judgment, whether the fourth fact is D or E.

(2) The facts are unequivocally A, B, C and D. They raise diagnostic possibilities E and F. He may be forced to decide, by using "average" judgment, whether the facts really point to E or to F.

(3) In treating a known condition he adopts of several currently sanctioned methods of treatment that preferred by the minority.

3. PHYSICIAN NOT A GUARANTOR EITHER OF DIAGNOSIS OR OF TREATMENT

A physician is not a guarantor either of his diagnosis or of his treatment, and the required negligence necessary for his liability is not made out by mere evidence of results of treatment or a failure to cure or a disappointing result.

4. PROOF OF "PRIMA FACIE" CASE OF MALPRACTICE

To make out a "prima facie" case of malpractice against the physician, a patient must prove the four D's —duty, dereliction, direct causation and damage—by a preponderance of the evidence, and when any of these elements depends on expert testimony lay evidence will not suffice. The competency of the witness as an expert is to be determined by the court on "voir dire" or qualifying examination before he is allowed to testify. The court should be exacting in this respect. Qualifications of a practitioner to speak on technical phases of a specialty foreign to his own knowledge and experience should be scrutinized more closely than in the past. Mere possession of the degree of Doctor of Medicine should not qualify automatically in all instances.

5. PHYSICIAN RESPONSIBLE FOR DERELICTIONS OF SERVANT

A physician is responsible for the conduct of an agent or an employee who acts under his immediate supervision or control and is thus his "servant" in legal parlance. Generally speaking, responsibility follows control or joint control of the medical transaction. Such responsibility may attach to a physician who has relinquished control but in the exercise of due care should have retained it, as when a skilled operator in the middle of a delicate operation without imperative cause turns over the completion of a task to one whose inadequacy should have been recognized.

Examples.—1. A dentist, X, orders a "servant" to remove a supposed root. In fact, it is a part of the jaw bone, and the "servant" fractures the jaw. X is liable. It was his duty to maintain control. Such cases arise when a physician whose personal skill has been bargained for delegates vital functions of the medical management to others without the patient's consent. Such a delegation makes the physician as liable in tort for the dereliction of his substitute as though he were performing the malpractice. Even if no tort is committed, the unauthorized delegation of a personal duty is a breach of the contract of employment, giving the patient a right to terminate it and to refuse payment. In the case related above, the dentist is liable, as "master," for the negligence of his "servant" committed in the course of employment. But he would also be liable, though out of control, if without the patient's consent he relinquished a nondelegable function to an independent person who performed the task negligently. Such would be the case, for instance, if he called a fellow practitioner from an adjoining office to give assistance in respect to a patient under anesthesia, and so unable to consent, and the physician called in was negligent.

2. X, the head of a roentgenologic department, is sued by Y for the negligence of Z in burning him by overexposure. This function Z carried out as an independent employee of the hospital, without any immediate control or supervision by X. Y is the "servant" not of X but of the hospital. His conduct cannot be imputed to X. X is not liable.[10]

3. Suppose the case is the same as the preceding one, except that X and Z are partners in business for themselves. X is jointly liable for a tort committed in prosecution of the partnership business even though he had no part in it.

Possible liability as a joint collaborator must be remembered. When physicians acting together commit a tort, each can be held responsible for the entire result. When two physicians are hired jointly as collaborators, in the absence of contrary instructions they have a right to effect a reasonable division of labor by dividing the functions to be performed. In such case, physician X needs to protest only such negligent performances of functions assumed by Y as occur in his

9. *Staloch* v. *Holm* (Minnesota Supreme Court) 1907, 100 Minn. 276, 111 N. W. 264, 9 L. R. A. (N. S.) 712, and *Luka* v. *Lowrie* (Michigan Supreme Court) 1912, 171 Mich. 122, 136 N. W. 1106, 41 L. R. A. (N. S.) 290.

10. *Withington* v. *Jennings* (Supreme Judicial Court of Massachusetts) 1925, 149 N. E. 201, 253 Mass. 484.

presence. He is under no responsibility in respect to negligent performance of his collaborator which he neither actually sees nor should have seen.

4. With patient B's consent, X chooses a substitute, Y, to act for him during his vacation. Y is negligent, and B sues X. X is not liable if he exercised due care in selecting one he reasonably thought to be competent. He had no control or supervision over Y, and Y must therefore be considered an "independent contractor." [11] (An independent contractor is one who performs an assigned piece of work by his own means, methods and judgment, free of the supervision and control of another, and usually under a contract for an "end result." In contrast, a servant works at the hours and times his employer specifies and receives a wage rather than a contract price, and his physical conduct in the performance of his duties is subject to the direct, and often minute, supervision and control of the master.)

5. X, a general practitioner, is consulted by patient Y. Certain laboratory work is needed which Y reasonably supposes X can do. As a matter of fact, X is familiar with the technics involved, but not having sufficient apparatus he farms the work out to Z, an independent professional technician. Z negligently arrives at erroneous conclusions, as a result of which X applies contraindicated, injurious treatment. Y sues X, claiming that he committed a breach of contract by delegating the work to Z without her consent. She also contends that X is responsible in tort for the negligence of Z. In respect to the first contention, the question is whether the work fell within the sphere of the special skill which Y could suppose she was getting in hiring X. If so, he could not delegate away this personal duty to an independent contractor without his employer's consent. To do so would constitute a breach of contract affording good cause for its termination. But if, as in this case, the work stood on the footing of routine work of simple character not calling for special skill, X could rightfully delegate the work to Z without first procuring the patient's consent. Once it is conceded that the work can be rightfully delegated under the contract without express authorization, X cannot be held liable for any negligence of Z in its performance, for Z is acting in the premises as an independent contractor. In each case of this type the crucial question is whether the patient had bargained for and reasonably expected X to do the work even though the test was a conventional procedure.

Assume that in respect to some extraordinary and usually nondelegable function, special laboratory work calls for apparatus which the physician does not have, and he suggests the employment of Z. In such event, while acting with the consent of his employer to the proposed delegation, he is liable only if he is negligent in selecting Z as an independent contractor at the outset. This depends on whether X knew or should have known, in the exercise of due care, of Z's incompetency. Otherwise, he is not liable for Z's negligence. Y should sue Z. The latter rule would apply to delegation by a private practitioner of work which the patient must realize calls for elaborate equipment the physician does not have, as when another person is called in to make roentgenograms or electrocardiograms with portable apparatus. It was held, on the other hand, in *Jenkins* v. *Charleston General Hospital* (West Virginia Supreme Court of Appeals) 1922, 90 W. Va. 230, 110 S. E. 560, that a patient of a hospital could rightfully suppose that the institution was equipped to diagnose his disorder and treat him as he had been led to expect. Hence, the negligence of an independent x-ray technician to whom the making of roentgenograms was delegated in failing to take the adequate views of plaintiff's arm necessary to a correct diagnosis, must be referred back to the hospital on master-servant principles. The hospital was held liable, but it must be pointed out that there is a split of authority as to whether the operator of x-ray apparatus is a "servant" or an "independent contractor."

Through an abundance of caution, the physician should always procure consent of the patient, in advance, to the proposed delegation of any significant function.

Of course, X is responsible for the negligence of his own technician, for she is his "servant," and a master must answer in law for the torts of a servant committed in the course of employment. The claim of a master that he hired the servant to be careful not careless and that any negligent conduct therefore falls outside the scope of employment is not a legally effectual contention.

6. It seems that on legal principle when a private physician assumes the care of a gratuitous patient he can no more delegate unique aspects of his professional care without consent in advance than in the case of the paying patient. Thus, in the absence of crucial emergency to substitute another for himself in the performance of an operation after such a patient is anesthetized and so without his consent would constitute a tort. The right to pass the patient from hand to hand may arise from implied consent when the patient can reasonably be bound to knowledge of such a custom, as in attending outpatient departments or large hospitals. Under such circumstances the physician may delegate any part of the care of the patient to colleagues without prior consent, subject only to the requirement that he use due care in selecting a competent person.

6. DUTY IS OF CONTINUING CHARACTER

The physician has a duty to make periodic examinations as needed, to give proper instructions to the patient, to attend him as often as good ("average") practice requires and to cease his attentions only when they no longer appear to be reasonably necessary or when the physician-patient relationship has been properly terminated by mutual consent, at the instance of the patient without prior notice or by the physician after reasonable notice in advance.

7. CONSENT OF PATIENT IS NECESSARY TO "TOUCHING" OF HIS PERSON AND BROAD CONSENT IS DESIRABLE FOR SURGICAL OPERATIONS

The physician owes a duty to obtain consent, express or implied, for any touching of the patient, either by way of physical examination, punctures of the skin, injections or operations. Implied consent may protect against a claimed battery, as for instance an allegedly unauthorized operation, but it is a dangerous and slippery justification. A surgeon should operate only on written consent authorizing such surgical procedures, operations and medical measures, to be applied by the surgeon in charge, his assistants or duly qualified substitutes, as in the judgment of said surgeon or qualified assistants or substitutes seem proper after the specified operation is begun. This should be signed by the patient or, if he is a minor, by the parent or legal

11. Accord: *Myers* v. *Holborn* (1895), 58 New Jersey Law (25 Vroom) 193, 33 Atl. 189, 30 L. R. A. 345, 55 Am. St. Rep. 606; *Hitchcock* v. *Burgett* (Mich. Sup. Ct.), 1878, 38 Mich. 501.

guardian. In emergencies, if express consent cannot be obtained readily and the patient's life is threatened by delay, the law empowers the surgeon, under a doctrine of "implied consent," to operate as necessary. Note that this warrant does not extend to collateral and unnecessary operations.

8. DUTY OF DISCLOSURE

On occasions, the physician comes under a duty of disclosure, as discussed earlier in this paper. In the past, insufficient attention has been given to the prophylactic usages of disclosure and consent. Whenever a physician is in doubt as to whether a proposed action or persistence in a long-continued regimen is for the patient's best interests, he should take inventory of his medicolegal position. He should seriously consider, as most physicians doubtless do, whether prudence and good medical practice indicate the desirability of discreet disclosure to the patient or his immediate family. Suppose he tells the patient that he has been unable to make an accurate diagnosis and suggests a trip to a medical center or a hospital for detailed study. If the patient decides against going, the continuation of symptomatic treatment may proceed with better conscience and with less risk of legal repercussion. To conceal the inability often may render negligent the continuation of a treatment known to be inefficacious. Furthermore, the running of a large bill may become a fraudulent act if it is known that no benefit is being conferred and yet the patient is given to believe that a cure is in progress. I have shown that the consent of a patient, without a disclosure of the material facts due him, may prove in fact to be no consent. When, however, consent of the patient follows full disclosure, certain conduct which might give rise to liability for malpractice may become unactionable.[12] This result can be explained in different cases on different grounds, as for instance: (1) voluntary assumption of (a known) risk by the patient or (2) contributory negligence of the patient operating as a direct concurring cause of the injury.

Contributory negligence of a plaintiff will defeat his action for injury negligently caused by the defendant. The law does not recognize the doctrine of "comparative negligence"; no attempt is made to compare the relative degrees of negligence of the plaintiff and the defendant with a view to fixing "net responsibility." The law does not offset mild negligence against gross negligence. If the plaintiff has been contributorily negligent at all and this has added to the injury, he is barred from recovery. However, his contributory negligence is an affirmative defense which the defendant has the burden of pleading and proving in most states. Furthermore, a defendant who has caused a wilful or wanton injury cannot plead contributory negligence of the plaintiff to defeat his liability.

Situations revolving around the existence of a duty to disclose present novel and intriguing problems. In the English case of *Gerber* v. *Pines* (High Court—King's Bench Division) 1934, 79 Sol. Journal 13, the facts were these: Dr. Pines had been administering a series of hypodermic injections into the gluteus maximus muscle of Mrs. Gerber in treating her for rheumatism. He employed due care and skill in the performance but broke off a needle, which he was unable to get out, and did not so inform the patient. Justice du Parc, after holding there was no negligence shown in the mode of injection or in the use of the needle, said, in substance:

> The next question was whether the doctor should have told the patient at once of the accident. It seemed to him that a patient in whose body a doctor found he had left some foreign substance was entitled to be told at once. That was a general rule, but there were exceptions. In this case, there was a breach of duty and negligence on the doctor's part in not at once informing either the patient or her husband on the day of the accident. The damages must be very small indeed, and in his view a fair amount to award was five guineas, and there would be judgment for that sum for the plaintiffs, without costs.[13]

In *Hobbs* v. *Kizer* (U. S. Circuit Court of Appeals for New Mexico) 1916, 236 Fed. 681, 150 C. C. A. 13, the plaintiff was a patient of the defendant. She indulged in illicit intercourse with him and became pregnant. When she told him of her condition, he assured her she must be mistaken and asked to examine her in order to discover what her trouble really was. She consented, and he made an examination with instruments, at the conclusion of which he reported that she had an abscess of the vagina which demanded prompt operation. She consented, and an operation was performed from which she made a rocky convalescence. She filed suit on the ground that, in fact, the defendant had procured an abortion. The Federal Appeal Court affirmed the judgment entered in her favor below on a jury verdict. This type of consent could be regarded as ineffectual because procured by fraud; though there was consent to the operation, the quality of the consent was imperfect because the patient was not put in possession of the material facts to which she was entitled. Alternatively, one might put the case on the ground that defendant had only a limited authorization extending to treatment of an alleged vaginal abscess; any other or additional operations exceeded the consent given.

In *Logan* v. *Field* (Kansas City Court of Appeals) 75 Mo. App., 594, a physician sued for medical fees. The evidence showed that the defendant had previously paid the plaintiff $122 for a prior course of treatments lasting several months which gave no relief from the chief complaint, nasal catarrh. On returning to the plaintiff for a further attempt, the patient said: "I don't want to run a big bill; and if you cannot cure me, I want you to tell me so. I have no money to throw away but am willing to pay you well if I can be cured." The physician replied: "I can't tell you now." During the next ten months the defendant was treated by the plaintiff sixty-five times, and at each treatment the plaintiff would say to him: "Your nose is getting along beautifully, beautifully." There was evidence that, in fact, no progress was being made and that the physician had expressed the opinion to others that the defendant's condition was incurable.

The physician recovered his fee in the trial court. That court refused to give the jury certain instructions requested by the defendant, these being to the effect that:

> . . . the defendant had the right to rely on the superior knowledge of the plaintiff to his own, and if the plaintiff knew, or by the exercise of ordinary skill and judgment, could have

12. Thus, even though an operation might not have been necessary, yet had the plaintiff requested or consented to its performance, such consent or request would be a defense so far as that part of the case was concerned. The Nebraska Supreme Court so held in *Mosslander* v. *Armstrong*, 1912, 90 Neb. 774, 134 N. W. 922.

13. In *Ernen* v. *Crofwell* (Supreme Judicial Court of Massachusetts) 1930, 172 N. E. 73, 272 Mass. 172, 69 A. L. R. 1140, the evidence was held to warrant a finding that the defendant dentist should either have removed a broken procaine hydrochloride needle from patient's jaw or informed her of its presence there so that she could have it removed. The reasoning applies, of course, to any foreign body lost or left in the patient's body.

known that he could not cure defendant, or that there was great doubt whether he could successfully treat defendant's ailment, or that the treatment would probably be of no substantial benefit, he ought to have so informed defendant; and even though defendant received treatment and plaintiff did not guarantee a cure of defendant, yet, if the plaintiff, under such circumstances encouraged, or suffered defendant to take treatment without informing him that there could be no cure, or that there was great doubt whether he could be successfully treated, or whether the treatment would be of substantial benefit, and that the defendant, relying upon the superior skill of plaintiff, received such treatment in the hope of a cure but actually received no benefit therefrom, then the plaintiff ought not to recover.

The appeal court reversed the judgment entered below for the physician's fee and remanded the cause for a new trial on the ground that the defendant was entitled to the foregoing instructions to the jury. The court indicated that whether the unnecessary and unbeneficial treatment was applied for a long period as a result of deception or because of negligence in failing to follow the patient's clinical course would not vary the result; either finding by the jury on sufficient evidence would defeat the physician's right of compensation.

Carey v. *Mercer* (Supreme Judicial Court of Massachusetts) 1921, 239 Mass. 599, 132 N. E. 353, holds that in respect to orthodox procedures, such as making roentgenograms for a suspected fracture of the tibia, the physician discharges his duty when he advises the patient to have them made. On the patient's refusal, the physician is not negligent in failing to outline the probable consequences to him of his failure to have roentgenograms made. The Massachusetts Court rests heavily on this chain of reasoning: It is the patient's duty to follow the reasonable instructions of his physician; failure to do so constitutes contributory negligence proximately causing or contributing to the deformity consequent on failure to make an early discovery of the fracture by means of roentgen examination. This reasoning is sound in respect to "run-of-the-mill" transactions. It is not sound in respect to extraordinary ones or to cases in which proposed procedures will radically alter the status quo of the patient, with attendant risk. Some courts might find it difficult to consider the situation before the court in *Carey* v. *Mercer* as a "run-of-the-mill" transaction and hence to agree with the reasoning on which it was decided. Certainly, most physicians in a case of suspected fracture would consider a missed diagnosis as fraught with such portentous consequences as to require careful explanation to the patient of the need for roentgenograms.

9. DUTY TO REFER PATIENT

Another novel problem to which I should at least allude is the question whether there is ever a legal duty to refer patients. Can the physician, morally and with legal safety say of a patient whom he cannot personally provide with "average" attention: "This is my fish, for better or for worse; I shall not throw him back into the medical pond"? This poses a question apt to become of increasing importance. I do not refer so much to cases in which the physician recognizes an emergency and almost invariably sends the patient to a hospital or to a specialist. I refer, rather, to cases he considers within his own sphere of action though he is not able to apply the learning, skill or equipment called for by current good practice in the community.

As a legal proposition, a physician courts the risk of liability for malpractice when, though he is unable to provide the facilities which the "average" practitioner knows to be necessary to the patient's interests, he holds on to the patient without disclosing the risk, offering to refer or associating a consultant. The same danger arises when one is able to carry out a desired procedure but only by a method which involves risk of injury to the patient, while others are equipped to apply a method so much safer that all risk is eliminated. The justifiable risk which one is warranted in taking becomes less and less as the harm threatened thereby increases in magnitude.

A highly important decision recently handed down by the Supreme Judicial Court of Massachusetts neatly illustrates the point. In *Vigneault* v. *Dr. Hewson Dental Company* (Supreme Judicial Court of Massachusetts) [1938] Mass. Adv. Sheets 807, 15 N. E. (2d) 185, the defendants injected procaine hydrochloride by pressure into the plaintiff's gums on several occasions before removing four abscessed teeth; in consequence, severe osteomyelitis of the plaintiff's jaw developed. The evidence showed that the danger of such a sequel was rather slight but that other dentists in the community could have reduced the risk to almost nil because they were equipped to use "deep block" anesthesia, which the defendants did not know how to apply. In affirming a judgment for the plaintiff for $4,450, based on an auditor's findings of negligence, the highest appeal court of Massachusetts said:

The defendant contends that negligence could not rightly have been found since "danger was remote." But remoteness of danger is a matter of degree. Though the danger was remote, it might, none the less, involve an unreasonable risk of harm to the plaintiff to which dentists, in the exercise of the skill required of them, should not have exposed him. . . . This is particularly true where, as here, the possible harm was of a serious nature. . . . A finding of negligence was not precluded, even though there was a substantial probability that harm might not actually result from the use of this method of anesthetization. A choice by a dentist of a "less safe method" rather than another "well-known method" may constitute failure to exercise the requisite skill in extracting the plaintiff's teeth. See *Galvin* v. *Old Colony Railroad Company*, 162 Mass. 533, 39 N.E. 186. There is nothing in the findings of the auditor to show that any emergency required the use of the "less safe method" or that a safer method was not available for the plaintiff at the hands of some other dentist. Nor is there anything in the findings inconsistent with the finding that the defendant's dentists should have advised the plaintiff to employ another dentist equipped to use a safer method of anesthetization, rather than have "undertaken a less safe method." Such may be the duty of a dentist who, for any reason, is unable personally to exercise the skill ordinarily exercised by dentists in the community. (*Mallen* v. *Boynton*, 132 Mass. 443, 446.) See, also, *Small* v. *Howard*, 128 Mass. 131, 136, 35 Am. Rep. 363. The finding of negligence must stand.

I could cite many cases in which practitioners have been held negligent in failing to seek roentgenograms in diagnosing or following up cases of fractures (with consequent poor end result), even though they themselves owned no x-ray apparatus and the use of the required facilities would have required the original physician to refer the patient to some one else, to call in a consultant with a portable machine or even to surrender the care of the patient to a hospital.

This duty of reference, which so lately has entered into cases at law, is of profound importance because of the increasing disparity between the equipment an individual physician can afford and that available in

hospitals or other medical institutions. Whether the duty to refer exists in a given case can, with a near approach to accuracy, be answered by adverting to this important criterion: what is the practice of the average prudent physician in the community in respect to referring a case such as this? When I allude to a duty to "refer," I wish it understood that this duty often can be met as satisfactorily by associating a specialist in the joint conduct of the case.

10. WAS THE ALLEGED DERELICTION ACTUALLY OUTSIDE THE SCOPE OF THE PHYSICIAN'S EMPLOYMENT?

Inquiry should always be made as to what was the problem of health which the physician in the particular case was called on to handle. Does the alleged dereliction apply to some ailment which really falls outside the scope of his employment?

Example.—X, a general practitioner, was called to treat Y for typhoid fever. This he did with success. During the same time, Y had been having subjective ocular symptoms and disturbances of vision, due to a local condition in the eye, which fell within the province of an ophthalmologist. Y later lost the sight in one eye, and an oculist testified he could have saved her sight had she been sent to him earlier. She sued X for negligence. (*Jones* v. *Vroom* [Court of Appeals of Colorado, 1896] 8 Colo. App. 143, 45 Pac. 234.)

The upper court held that the trial court properly instructed a verdict for X, since Y had employed him only to treat the typhoid fever; the other complaint lay outside the scope of his employment. He had no duty to treat the ocular condition. In respect to the duty to refer, the evidence clearly showed that Y herself was aware of the condition of her eye and of the need of an ophthalmologist and that she could have procured the services of one by telephoning to a nearby town. It was as though X had told the patient of an ocular condition which fell outside his field of practice and had advised her to see some one else. The case could therefore rest on lack of proximate causation: the patient's own neglect was the proximate cause of the injury she suffered. The case is thoroughly sound, except for the embarrassing fact that X had promised to procure an ophthalmologist for Y and did not. The court reasoned that when Y saw, after many days, that X was not going to act she, herself, could have telephoned an ophthalmologist. The fault of such reasoning is this: Y could reasonably suppose that X, as an informed man, could procure for her a more suitable specialist than she herself might choose and so could justifiably await his action, with resulting detriment. Even in 1912, this feature would have carried danger of liability had Y offered, as she did not, medical testimony that local practice deemed it negligent for a physician to fail in the execution of a voluntarily assumed undertaking to procure suitable medical aid. As the general physician more and more acquires the status of a family counselor on health, the reasoning on which this case was rested becomes less and less valid.

11. LEGAL EFFECT OF VOLUNTARILY ASSUMING HIGHER DUTY THAN PHYSICIAN-PATIENT RELATIONSHIP WOULD CREATE

I have pointed out that the scope of duty can be voluntarily enlarged by express contract provisions. It is my theory that infringement of these "extra security" clauses, with nothing more, constitutes only breach of contract and not a tort.

As illustrations, I can cite instances in which the physician has "guaranteed" a cure to the patient. These contracts form a class which may be called "no cure, no pay" agreements, for if the physician does not fulfil the guarantee, no obligation to pay arises. But this failure to perform a greater duty than the law implies, with no "dereliction" as judged by "average" standards, does not constitute a tort. It is not malpractice at all but a mere breach of contract. It is important for the courts to receive and to apply this distinction.[14]

12. TO WHAT EXTENT CAN SCOPE OF DUTY BE REDUCED BY EXPRESS CONTRACT?

Can the scope of duty be reduced by express contract and, if so, in what respects? I believe that the scope of medical duty can be lessened only to the extent that disclosure to the patient and the latter's consent can effect a reduction of duty, as previously described.

Suppose X, a physician, goes further and has his patient sign a written contract reading: "Y, as patient, in consideration of his treatment by X, hereby agrees to waive all requirements as to knowledge, judgment, care and skill and any claim for damage arising from failure to apply same to his medical care." Such a contract would defeat the public policy of maintaining a minimum standard of skill in the practice of medicine, since licensure statutes can adequately protect only against want of knowledge. It would also open the door to imposition on the weak and the credulous. Society has an interest in securing the health of its citizens, both in respect to preserving their economic self sufficiency and in keeping them fit for the possible defense of the nation. It has a further interest in protecting the more proficient physician from the irresponsible competition of a class relieved by "contract waivers" from the responsibility which every conscientious physician considers rightfully his in dealing with patients. For these reasons, whenever "total waiver" clauses come before the courts, they have good warrant for holding them void as against public policy.

13. WHAT ARE THE SALIENT PRINCIPLES OF CRIMINAL RESPONSIBILITY FOR MALPRACTICE?[15]

I have already shown that criminal liability for murder, manslaughter or assault and battery can be based on reckless conduct, even though there was no intention to cause death or to inflict injury. The degree of recklessness which must be found for criminal liability is greater than the minimum necessary for civil liability for malpractice. For murder, the jury must find that the course of treatment was "imminently dan-

14. The distinction I contend for has been indirectly recognized in *Frankel* v. *Wolper*, 1918, 181 App. Div. 485, 169 N. Y. Supp. 15, a case in which the court had occasion to state the measure of damages recoverable for breach of an agreement to cure. It said: "The defendant would not be liable, upon his agreement to cure, for plaintiff's pain and disability resulting from the conditions to be cured, or for pains and disabilities caused by defendant's ignorance, or lack of skill, or for pains and disabilities caused by subsequent operations to cure her of her malady, or to avert the consequences of defendant's lack of skill, or failure to perform his contract, or expenses to alleviate any such pains and disabilities. The contract to cure was not that the defendant would, upon failure, pay the damages resulting from her malady continuing, or for the results of his lack of skill, or ignorance, or for the physical consequences of treatment by other physicians necessitated by her condition. The thing he undertook was to cure her. That did, indeed, involve the elimination of the condition that begot suffering and disability. But a physician cannot be held responsible for suffering from a cause which he agrees to end, but does not, unless he is guilty of malpractice. . . . I would say, also, that where a physician, with whatever prudence, agrees that his treatment will cure, and it does not, the patient is absolved from payment, may recover advances, may recover expenditures necessitated for nurses and medicines, and may be for something else." (Affirmed: 1920, 228 N. Y. 582, 127 N. E. 913.) Whether the damages for breach of a guaranty to cure will be so confined by the courts of all states is subject to some doubt on legal principle.

15. Mr. Livingston Hall, professor of criminal law, Harvard Law School, supplied the material contained in this section.

gerous to the patient" and showed a "depraved mind regardless of human life." Typical examples in the law include shooting recklessly into a house or a vehicle in which people are known to be or driving through a crowded street at extreme speed while intoxicated. Obviously, it is highly unlikely that any physician would be guilty of such gross dereliction of duty as to incur liability for murder on this ground.

There are a number of prosecutions against physicians for manslaughter, instances in which death has been caused by the gross negligence or recklessness of the attending physician. In England, it has been well settled that:

> . . . in order to establish criminal liability the facts must be such that, in the opinion of the jury, the negligence of the accused went beyond a mere matter of compensation between subjects and showed such disregard for the life and safety of others as to amount to a crime against the State and conduct deserving punishment. (*Rex* v. *Bateman*, [1925] 19 Cr. App. Rep. 8.)

The matter was more recently put by the House of Lords in a case involving reckless driving thus:

> Simple lack of care such as will constitute civil liability is not enough; for purposes of the criminal law there are degrees of negligence: and a very high degree of negligence is required to be proved before the felony is established. Probably of all epithets that can be applied "reckless" most nearly covers the case. It is difficult to visualize a case of death caused by reckless driving in the connotation of that term in ordinary speech which would not justify a conviction for manslaughter: but it is probably not all-embracing, for "reckless" suggests an indifference to risk whereas the accused may have appreciated the risk and intended to avoid it and yet shown such a high degree of negligence in the means adopted to avoid the risk as would justify a conviction. (*Andrews* v. *Director of Public Prosecutions* [1937] A. C. 576.)

It will be noted that by these English cases there can be no conviction for manslaughter unless the defendant has appreciated that there is a considerable risk of death involved and has either failed to take precautions or has taken inadequate precautions to guard against it. In some American jurisdictions a similar requirement is found, and a physician who honestly believes that no substantial risk of death is involved in his treatment cannot be convicted (*State* v. *Shulz*, [1881] 55 Iowa 628, 8 N. W. 469, 39 Am. Rep. 187).

In some American jurisdictions, however, a conviction for manslaughter has been upheld when the conduct of the physician was grossly negligent, even though it cannot be proved that the physician realized that his conduct was dangerous. Justice Holmes, in affirming a conviction of manslaughter against a physician who had treated a woman by keeping her in flannels saturated with kerosene for three days, apparently in the honest belief that this treatment would be beneficial, put the test thus:

> The defendant knew that he was using kerosene, the jury have found that it was applied as a result of foolhardy presumption or gross negligence, and that is enough. Indeed if the defendant had known the fatal tendency of the prescription, he would have been perilously near the line of murder. (*Commonwealth* v. *Pierce*, [1884] 138 Mass. 165, 52 Am. Rep. 264.)

The same standard as to recklessness is applied in a prosecution for assault and battery for causing injury short of death by reckless conduct as is applied in determining whether the defendant would have been guilty of manslaughter if the victim had died.

3. Had the Duty, Though Once Existent, Been Extinguished Before the Time of the Alleged Dereliction?

Suppose, as in the usual case, the physician is treating the patient under an implied contract of employment. It is expected that he will visit as frequently and as long as is reasonably necessary. There is no specified time limit to his connection. The relation may be ended at once by mutual consent or after any given visit by notice from the patient. Since protection of the patient's health is of prime concern, the physician cannot sever his connection so abruptly. He can withdraw in absence of the patient's consent only after giving reasonable notice in advance, so that the patient may have a fair opportunity to engage a successor.

Suppose the treatment is under a formal contract. In this case, the relation ends only when the performance specified in the agreement is concluded. The patient cannot discharge the physician before that time except for cause, that is to say, a breach of contract.

If the patient knows of the custom in advance and the contract does not forbid, a surgeon may leave the care of the patient after an operation to the regular hospital staff.

Thus it is seen that whether the physician's engagement is under express or under implied contract, unless the services are sooner discontinued by mutual agreement or by rightful termination a legal duty exists to attend the patient until he can be discharged safely.

In the case of emergency aid given to a wayside victim, the passing physician who assumes to act comes under no duty to continue the injured man as his patient. His duty is to see that he does not leave him in worse circumstances than those in which he found him. This obligation is discharged either by putting him on the way to a hospital or, after rendering imperative first aid, seeing that the persons who assume charge of the injured man will undertake to get him to suitable medical care within the period of safe delay.

In accepting a gratuitous patient, the physician takes him under no binding agreement to continue treatment for any definite term. He may withdraw after giving reasonable notice of his intention. Theoretically, he can drop the patient "instanter" if he leaves him in no worse condition than that in which he found him. Some courts may hold that the danger of injury to the patient's health from sudden discontinuance raises a duty of advance notice. When such a patient does not assent to the immediate termination and is still sick, the careful physician will do well to give even the gratuitous patient a few days' notice of his withdrawal. Likewise, a hospital cannot afford to order a sick patient to pick up his bed and walk without similar regard to a reasonable opportunity for him to arrange a destination.[16]

If the physician will apply these concepts of duty to every action or omission, proposed or past, of his medical conduct, he will come close to knowing whether negligence is involved in the transaction under scrutiny.

II. DERELICTION

My formula of liability for malpractice is duty dereliction, direct causation and damage. Presence of "duty" resting on the physician implies a correlative legal right in the person to whom the duty is owed. "Dereliction" implies a breach of this duty and a consequent invasion

16. However, it seems that a physician can legally terminate his relationship with a gratuitous patient instanter by tender then and there of a competent substitute.

of plaintiff's legal right. Duty and dereliction are thus closely intertwined, and in dealing with dereliction in this section I am in measure recapitulating all the duties owed by the physician and asking whether he has breached one of them. Indispensability of the concurrent existence of all four D's must never be lost sight of; mere faulty performance, in absence of any duty, constitutes no legal wrong. Conversely, mere duty, without proof of faulty performance, constitutes no legal wrong in respect to which recovery at law can be had.

It is important to grasp the rather neat point that not all legal liabilities arising from medical conduct are malpractice. This is a concept worth stressing, both in elucidating the legal position of the physician here and in appearing before courts. Even though the measure of damages will often be the same, the physician is entitled to have the rather malignant term "malpractice" correctly applied and not used in a loose and overbroad sense. Table 2 seeks to embody this proposition and to make the correct analysis clear.

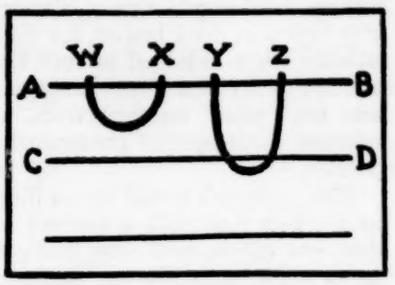
TABLE 2.—*Legal Liabilities Arising from Medical Conduct*

A. Distinction Between True Malpractice and Liabilities Resting on Independent Grounds

1. Malpractice
   - (1) Liability for tort (negligent practice, etc.) to one who is a patient
   - (2) Liability for medical conduct toward a patient which would constitute a tort without existence of physician-patient relationship (e. g. false imprisonment or battery)
   - (3) Liability for faulty medical conduct (1 or 2) intended to affect the other person, even though that person's unwillingness to accept the actor as his physician prevents true consensual relationship of physician and patient from ever arising

2. Not Malpractice
   - (1) Liability for failure to fulfil superduties assumed by contract; this is mere breach of contract. Level of performance required by superduties assumed by contract (A-B)

     Duty of care, knowledge, judgment and skill required by law of torts without any express agreement (C-D). In event of superduties assumed by contract: performance W-X = breach of contract only, performance Y-Z = tort and malpractice as well as breach of contract

   - (2) Liability for failure or refusal to establish physician-patient relationship as agreed in advance by contract. This, likewise, is a mere breach of contract
   - (3) Medical conduct which is negligent as to third persons not intended to be affected but injured by careless practice

     Example: Surgeon X, while attending the plaintiff's husband, directed the plaintiff to assist in dressing a wound, knowing there was danger of infection but negligently assuring her to the contrary. The plaintiff relied on his advice and was infected through scratches on her finger. X is liable. (Edwards v. Lamb [Superior Court of Judicature, N. H.] 1889, 45 A 480, 69 N. H. 599)

     Example: J. was the sole attending physician of T. who had black smallpox. J. assured a neighbor, S., that T. had no contagious disease and that S. would take no risk by waiting on him in his illness. S. waited on T. and helped to prepare his body for burial; in consequence, he contracted smallpox and died. J. is liable in a suit for 'wrongful death' brought by S.'s widow, if a general practitioner of average ability should have diagnosed the malady: (Jones v. Stanko [Ohio Supreme Ct.] 1928, 118 Ohio St. 147, 160 N. E. 456)

     The physician owes the duty which the motorist owes, to avoid exposing those in his sphere of action to unreasonable risk of harm; in short, he carries the general duty of care which all persons share

B. More Detailed Analysis of Dereliction in Malpractice

Dereliction →

Negligence

1. Affirmative act (misfeasance) constitutes negligence if improperly performed even though no preexisting duty was owed to the person affected (no necessity to prove mutually agreed physician-patient relationship but only the physician's assumption to act in a medical way toward the person injured.)
2. Omission to act (nonfeasance) constitutes negligence only if the defendant owed a duty to the injured person to do the omitted thing
3. "Ordinary" negligence and "gross" negligence must be distinguished; the latter is such reckless, wanton or extreme negligence that the injured party is entitled to "punitive" as well as compensatory damages

Intended Acts or Omissions

These are "torts" recognized by general law without need of proving any special relationship such as that of physician and patient. Yet they constitute "malpractice" when committed in medical practice or associated conduct knowingly directed toward another person as the object of the medical attention, even though the strict relationship of physician and patient is not demonstrable

1. Battery.—The touching of another without consent, as in operations going beyond authorization or unauthorized physical examinations
2. False Imprisonment.—The forcible deprivation of the right of another to go where he pleases by holding him captive against his will and without legal justification
3. Slander.—Physician tells a stranger that patient X has syphilis when such is not true and physician has acted on negligent diagnosis and not in good faith. (Libel if communication is written rather than spoken)
4. Interference with Property Rights.—Violation of property rights in dead bodies, as by performing unauthorized autopsies. (Coty v. Baughman [South Dakota Supreme Court] 1926, 210 N. W. 348; $1,500 judgment for autopsy performed without consent)

These are "torts" dependent on existence of a physician-patient relationship. In such cases "malpractice" can be made out only by proof that such a relationship existed

5. Breach of Trust Relationship.—(1) Failure to disclose material facts to the patient under circumstances which raise a duty to speak. If the suppression is not intentional, the failure to disclose may be negligence. If intentional, it may constitute actionable fraud or deceit. (2) Query: Liability for disclosure of confidential communication?
6. Fraud.—Intentional misleading of patient on a material matter, the patient reasonably relying to his injury on a statement of fact
7. Violation of Certain Statutory Duties.—If intended for patient's exclusive benefit
8. Professional Conduct Toward Patient Constituting Criminal Law Offense.—This usually confers simultaneous rights on patient to proceed in "tort" for civil compensation of the injury suffered
9. N. B.: As I have pointed out in an earlier portion of this paper, it is customary in the law of torts to divide wrongs into negligent conduct and intended conduct. Nevertheless, intended conduct, which may be a tort on that score, may also be a tort on the separate or alternative ground of negligence. This is the case if the conduct is of a character called bad practice by the medical profession of the time and place (e. g. when a surgeon, contrary to the customs of surgeons, breaks a united callus without the patient's consent; this act is a "battery" but it is also suable as "negligence")

No more will be said as to the legal liabilities which may flow from medical conduct independently of malpractice. Table 2, aided by previous discussions, should make this aspect clear. "Malpractice" is somewhat of a "weasel" word. To different minds it has different connotations. First of all, one should distinguish "criminal malpractice," with its implication of moral turpitude, and "civil malpractice," which may be entirely neutral in its moral aspects. It might be argued that the term "malpractice" properly applies only in respect to the alleged wrongful conduct when (1) it occurred in respect to an existing physician-patient relationship and (2) it would constitute no legal wrong in the absence of such relationship. Under this analysis, malpractice would comprise only negligent conduct and breach of those duties which depend strictly on the physician-patient relationship. It would not include battery, false imprisonment, slander or violation of property rights in dead bodies, for this conduct carries legal liability when indulged in even toward a stranger without any proof of a physician-patient relationship. These acts are "torts" on their own, without any necessary reliance on a special consensual relation between the parties.

This approach would be not illogical; its weakness lies in the fact that such a concept of medical malpractice goes too far in excluding from the definition transactions which actually are performed in the course of medical practice. It is better, therefore, to consider "malpractice" as extending to all alleged injuries arising from medical activity or conduct in the course of practice knowingly directed toward another person as the object of the medical attention, even though the strict relationship of physician and patient is not demonstrable.

This concept is broad enough to cover the case in which a physician treats an injured person whose unconsciousness prevents actual consent and the lack of an emergency precludes implied consent. It also covers the cases of treating persons incapable of consenting, for instance insane persons, and a variety of other situations which may arise from time to time.

As illustrations, I shall mention briefly two interesting decisions. In *Harriott* v. *Plimpton* (Supreme Judicial Court of Massachusetts) 1896, 166 Mass. 585, 44 N. E. 922, the plaintiff was engaged to be married to the daughter of X. He was seen by a fellow lodger treating a traumatic lesion of his genitals. This officious busybody relayed his observations to X. The latter much desired the plaintiff to consult the defendant in order that an examination for venereal disease might be made before the nuptials were performed. The plaintiff willingly acceded and repaired to the defendant's office, never intending to become the latter's patient. Note that the defendant did not make his examination with a view to treatment but solely for the purpose of giving information.

The defendant made a negligent diagnosis of gonorrhea, which was duly communicated to X and his daughter, with the result that the engagement was broken. In fact, the plaintiff had no venereal disease whatever. He sued the defendant, and the jury found the examination was negligently performed. From a judgment for the plaintiff on the verdict, the defendant filed a vigorous appeal. The Supreme Judicial Court of Massachusetts held that duty existed despite the nontherapeutic purpose of the examination, that the defendant breached the duty by his negligent examination and that the breaking off of the engagement to marry was not too remote or unforeseeable a consequence to constitute a legal damage. The court affirmed the judgment for the plaintiff.

In *De Freville* v. *Dill* (King's Bench Division) 1927, 105 Law Journal 1056, 96 L. J. K. B. (N. S.), an interesting situation came before the English courts. A had married B, the son of a vicar, X. B, having tired of his "better half," returned to his point of origin, where he was warmly welcomed by X and reincorporated into the household. On several occasions, A forced her way into this same haven, feeling her matrimonial rights extended to the privilege of being with her husband, though to X she was a persona non grata. After one such episode, when A had entered X's household by the back way, X promptly called in Y, a local practitioner, to make a psychiatric appraisal. After several calls, colored by a distinctly negative attitude on the part of A to this scientific "sizing up," Y signed a lunacy certificate and had A carried to a mental hospital pending final hearing. A day later, the physician-in-chief of the mental hospital promptly discharged A as a sane person, and she filed suit against Y. The jury specifically found that no relationship of physician and patient existed, for A never agreed to take Y as her doctor and, in fact, looked with hostility on his interference. They also found that Y acted in good faith and without malice but negligently. The Court of Appeals held that a verdict and judgment in A's favor against Y must be affirmed. The recovery was for £50.

In the usual case, a relationship of physician and patient will exist by mutual understanding of the parties. Furthermore, "negligence" will usually be the fault charged. Such dereliction in the medical conduct usually consists of some act or omission which threatens a foreseeable, unreasonable risk of injury to the person affected. In such case, the conduct is negligent if the "average" practitioner would regard the act or failure to act as bad practice. I have shown that a mere failure to act is not negligence unless there is a duty to act. What is an unreasonable risk varies with the magnitude, imminency and gravity of the harm which may ensue and the counterbalancing good to be secured. Thus, even a small risk which threatens the loss of a man's life may well be unreasonable and so negligent, while a greater risk of a much lesser harm, such as temporary induration of an arm from a testing for serum sensitivity, might not be negligent. The interest to be secured by the proposed conduct and the likely results of contrary action, as shown by competent medical testimony, are also to be weighed by the jury in determining the crucial question of negligence. The fact of a patient's consent, after a full disclosure, may at times strip a transaction of its negligent character, as when an unnecessary operation is done as a "long chance" at the patient's behest.

Yet, though "negligence" is by far the most common form of malpractice, it is not the only culpable medical conduct directed toward another which may constitute an actionable tort and so a "dereliction." As I have said previously, "torts" are all those injuries to the rights of personality or property of one person occasioned by invasions of another person which occur without legal justification. The variety of "torts" which may constitute malpractice because they arise from medical conduct directed toward another is illustrated in part B of table 2.

(To be continued)

Council on Pharmacy and Chemistry

REPORTS OF THE COUNCIL

BECAUSE OF THE NEED FOR AN AUTHORITATIVE STATEMENT ON THE PROPERTIES OF THE SYMPATHOMIMETIC AMINES AS SUBSTITUTES FOR EPINEPHRINE, DR. M. L. TAINTER, WHO HAS DONE MUCH WORK IN THIS FIELD, WAS ASKED TO PREPARE A SUMMARY OF RECENT WORK ON THIS SUBJECT. IN AUTHORIZING PUBLICATION OF THE FOLLOWING REPORT THE COUNCIL WISHES TO EXPRESS ITS APPRECIATION TO DR. TAINTER FOR HIS EXCELLENT SUMMARY.

OFFICE OF THE COUNCIL.

THE SYMPATHOMIMETIC AMINES AS EPINEPHRINE SUBSTITUTES

A GENERAL SUMMARY

M. L. TAINTER, M.D.
SAN FRANCISCO

Since the introduction of epinephrine as a therapeutic agent some forty years ago, there has been an increasing interest in possible synthetic substitutes which might have advantageous qualities over that of the original drug. Ephedrine and tyramine, which occur in nature, have been thoroughly studied but are being encroached on by synthetic agents of related structure. This report is concerned with certain aspects of the chemical composition and actions of those members of this group which are now being advocated and made available in this country for clinical use.

GENERAL CIRCULATION

The most striking action of these drugs is their power to stimulate the circulation. The pressor effects are produced by arteriolar constriction and possibly increased cardiac output accompanied by variable effects on heart rate. The pulse rate effects are variable since, although the drugs tend to cause great acceleration, this may be changed to distinct slowing if the vagus reflex mechanism is sensitive. These circulatory actions are used in combating failure of the circulation from a variety of causes. During acute emergencies, as in accidents of anesthesia and in drowning, the injection of these drugs may result in the saving of life. The drugs useful for this purpose, besides epinephrine salts, are those with strong cardiovascular actions. Cobefrin hydrochloride,[1] neosynephrin hydrochloride, ephedrine sulfate or hydrochloride and propadrine hydrochloride are probably the best examples in the order named. When there has been a serious fall of blood pressure during spinal anesthesia, or to prevent such an accident, any of these drugs may be used, provided their duration of action and dosage is such as to meet the needs of the particular clinical condition. Ephedrine salts appear particularly useful for this purpose, since these have prolonged actions, although neosynephrin hydrochloride is also effective but of more transitory duration. The other members of this group have not been extensively enough used under such conditions to allow any opinion as to their relative merits. Surgical shock is rather poorly combated by any of these, except temporarily, and recourse must be had to other methods, such as restoring blood volume, which give more permanent results.

LOCAL ANESTHESIA

The vasoconstriction is also used to prolong local anesthesia. The synthetic substitutes for epinephrine hydrochloride which have been tested in this connection are cobefrin hydrochloride and neosynephrin hydrochloride. A concentration of 1:10,000 cobefrin hydrochloride and 1:2,500 of neosynephrin hydrochloride is clinically equivalent to about 1:50,000 of epinephrine hydrochloride. Both are satisfactory, although they tend to permit somewhat more bleeding than the latter drug. Otherwise the differences between all three in local anesthetic solutions are too small to detect, except from comparisons of very extensive data, because the duration, intensity, speed of onset and other factors are very much alike. The salts of other sympathomimetic amines, such as amphetamine sulfate, propadrine hydrochloride and ephedrine sulfate or hydrochloride, have not been demonstrated to be of value for this purpose, probably because their vasoconstrictor power is inadequate.

DECONGESTIVE EFFECTS

Another vascular effect which is utilized clinically is the shrinkage of turgescent mucous membranes, as in rhinitis and other nasal conditions. All the compounds in this group shrink such mucosae with a clinically useful degree of efficiency. Epinephrine or its hydrochloride is not generally preferred for this purpose because it produces so much constriction that the resulting tissue anoxemia and the secondary active vasodilatation and irritation are apt to give rise to delayed local edema and swelling. The most popular compound has been ephedrine or its salts, which in concentrations of about 1 to 3 per cent produces moderately complete blanching of the nasal mucosa. An equal, if not greater, degree of constriction is produced by 0.25 per cent neosynephrin hydrochloride and by higher concentrations of amphetamine or propadrine hydrochloride. These nasal preparations are used in the form of aqueous or liquid petrolatum solutions, with or without the addition of aromatic principles, except the volatile amphetamine, which is dispensed in the form of an inhaler tube. The aromatized liquid preparations and the amphetamine vapors are frequently irritating and therefore should be used only in those conditions in which acute inflammation is not present. It seems unlikely from the clinical evidence that any of these compounds has a decisive advantage over the others in the degree of irritation which its aqueous solutions produce. Various special solutions of these agents are advocated, wherein the solvent has been buffered or made isotonic by the addition of physiologic solution of sodium chloride mixtures or dextrose. While these may be better theoretically than the more acid solutions which result when they are dissolved in physiologic solution of sodium chloride, any real advantage does not seem to have been adequately established by the clinical reports thus far available. Similarly, there seems to be no acceptable proof that the addition of antiseptic agents to these solutions is a beneficial modification.

MYDRIASIS

All these drugs dilate the pupil, so that they can be used as clinical mydriatics, particularly when combined with atropine or its derivatives. Although there are a number of favorable clinical reports of such uses, these drugs do not appear to have attained great popularity as mydriatics.

BRONCHI

Bronchial dilatation is produced in a dramatic way by epinephrine hydrochloride, but to a much lesser extent by the substitutes. Neosynephrin hydrochloride, ephedrine sulfate or hydrochloride and propadrine

From the Department of Pharmacology, Stanford University School of Medicine.

1. Cobefrin hydrochloride is the proprietary name for racemic 3,4-dihydroxy-phenyl-propanolamine hydrochloride, manufactured by the Winthrop Chemical Company. It does not stand accepted by the Council on Pharmacy and Chemistry.

hydrochloride are moderately effective for this purpose, although their action seems to be best in the milder cases of bronchospasm. The musculature of the gastrointestinal tract is generally relaxed by these compounds, but the effects seem to be produced only in doses which cause definite changes in the circulation. This fact therefore limits their clinical usefulness in gastrointestinal disorders. However, they have been used to advantage in facilitating radiologic examination, when spasm may complicate the interpretation of fluoroscopic examinations.

ABSORPTION AND FATE

The absorption of these drugs, when taken by mouth, is controlled by a number of physiologic factors. If the agent is a very effective vasoconstrictor, it limits its own absorption by reducing the blood flow through the mucosa of the gastrointestinal tract. If the compound is chemically unstable, it is destroyed by the digestive ferments or by the liver as the blood passes through it on its way to the general circulation. For this reason, oral effectiveness occurs mainly with those compounds which are chemically stable and which have lesser degrees of vasoconstrictor power. Ephedrine sulfate or hydrochloride, amphetamine sulfate and propadrine hydrochloride are rather effectively absorbed and therefore can be administered clinically in this way with fairly reliable effects. Neosynephrin hydrochloride also has some demonstrable potency by mouth, although the dose must be vastly increased over that which is effective by parenteral administration. Those compounds having a catechol nucleus, such as epinephrine hydrochloride, cobefrin hydrochloride and kephrine hydrochloride, are almost completely inactive by the oral route.

After absorption, the compounds with a phenolic or catechol nucleus, such as epinephrine hydrochloride, cobefrin hydrochloride, neosynephrin hydrochloride and kephrine hydrochloride, are mainly destroyed in the body. On the other hand, those compounds without the hydroxyl group on the benzene ring, such as ephedrine sulfate or hydrochloride, propadrine hydrochloride and amphetamine sulfate, apparently resist chemical change much more completely and can be identified in important amounts in the urine. Since the duration of action of these drugs is related to the ease with which the body can destroy or eliminate them, the actions of the former compounds tend to be of short duration, whereas those of the latter are prolonged, the exact duration being modified by the dose administered. Possibly because of this same difference in rate of elimination the compounds of the latter group tend to show tachyphylaxis; that is, they tend to have a sharply decreasing effect with successive doses, particularly when the administrations are made at short intervals.

TOXICITY

The toxicity of these drugs is produced through two major mechanisms. First, there is the stimulation of the circulation, which, if too much may give rise to acute cardiac dilatation with pulmonary edema, vascular accidents and other sequelae of acute hypertension. The other objectionable side effects are those resulting from central stimulation; that is, nervousness, general excitement, tremors and insomnia from direct irritation of the central nervous system. In hyperthyroid states the circulatory response to epinephrine is increased, so that the dosage must be reduced if too strong a response is to be avoided. Whether the same increased sensitivity is seen with the other compounds is not certain. It is probable that the same caution should be used in patients with hypertension, since in them added cardiovascular strain may be dangerous. The cardiovascular toxicity is important mainly in the case of epinephrine, since, with the other agents, the doses required to produce such circulatory effects are considerably beyond any which are apt to be used in practice.

The margin of safety with respect to the stimulation of the circulatory system increases with the greater deviation from the epinephrine structure. Clinical observations on severe or fatal toxicity of these products for human beings is sparse, so that no accurate estimates can be made as to what the human fatal doses might be. However, animal experiments indicate fatal effects in the dose range of 10 to 50 mg. per kilogram or more. These quantities are high enough to indicate the wide margin existing between these amounts and the doses employed clinically. Because of this unusually high safety margin, claims for the superiority of one compound over another based on the cardiovascular toxicity have little significance.

CENTRAL EFFECTS

Stimulation of the central nervous system is apparently not dependent on the cardiovascular effects, since there is no correlation between potency for the circulation and that for central excitation. The most effective central stimulant is amphetamine sulfate, with ephedrine and epinephrine salts producing lesser effects in the order named. The amount of such action is minimal or completely lacking in any tolerated dose with neosynephrin hydrochloride and propadrine hydrochloride. There is a great difference in the potency of the optical isomers, the dextro-amphetamine being considerably more active than the levo form. Conversely, levoephedrine is a more potent excitant of the central nervous system than is its dextro derivative. In each case the racemic mixture is intermediate in action, as might be expected. These facts also emphasize the lack of agreement between cardiovascular actions and those on the brain, since the levo compounds are the more active circulatory drugs. Cobefrin hydrochloride produces central stimulation in patients comparable to that of epinephrine salts, although it is probably less effective in animals in doses which can be withstood by the cardiovascular system. The relative intensity of these central effects are extremely difficult to judge in human beings, because of the lack of efficient quantitative methods and because they are so frequently superimposed on psychic effects arising from operative or other procedures, or the disease state itself.

STYPTIC USES

Kephrine hydrochloride, the base of which is the ketone precursor of epinephrine, has been used for many years in Europe under the name of adrenalone, for local application as a styptic. It would seem to have some merit for this purpose when applied locally in dusting powders or impregnated on gauze in packing oozing wounds. It has a low order of vasoconstrictor power which is unlikely to give rise to serious local anoxemia. The other agents might conceivably be used in the same way, although they have not been actively advocated for this general type of application, except perhaps during acute surgical emergencies.

UNSOLVED PROBLEMS

Problems which are attracting close attention at the moment relate to possible differential effects of these drugs and related agents on the circulation. These are concerned with preponderance of actions of some of these agents on the heart as compared to the peripheral vessels, or on the venous side of the circulation as compared to the arterial side. Such studies have not yet gone far enough to demonstrate clearly that the differences observed are not primarily the result of differences in the relative dosages tested. If it can be clearly demonstrated that certain of these agents have predominant actions on some part of the circulatory system, a means may be afforded for selecting more rationally the drug to be used under a given clinical condition of cardiovascular failure.

Attention is also being given to the possibility of drug addiction from the central stimulation of amphetamine and its sulfate. The effectiveness of amphetamine on the central nervous system is much greater than that of caffeine or the other common central stimulants and resembles qualitatively the actions of cocaine. Since amphetamine sulfate frequently causes euphoria or other pleasant symptoms and is used by the public as a "pep-up" drug to restore failing energy or to ward off the effects of fatigue, the conditions are present for establishing addiction. The profession may do well to remember that cocaine was used for centuries before its addiction properties were recognized, that heroin (diacetylmorphine hydrochloride) was used as a cure for addiction to morphine, and morphine for alcoholism, and that historically the recognition of addiction has always lagged considerably behind the introduction of the drug in question. Therefore, until the propensities of amphetamine and its sulfate in this connection are thoroughly understood and the dangers fully assessed, it would seem wise to use this agent only in those conditions in which a definite need for it has been demonstrated and the conditions tending to establish addiction are not present.

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATIONS.

OFFICE OF THE COUNCIL.

BACTERIAL VACCINE MADE FROM THE TYPHOID BACILLUS (See New and Nonofficial Remedies, 1940, p. 461):

The Upjohn Company, Kalamazoo, Mich.

Typhoid Vaccine.—A suspension made from a single strain, namely *Eberthella typhosa* strain 58 (the Panama carrier strain). Marketed in packages of six 2.5 cc. vials containing 1,000 million killed typhoid bacilli per cubic centimeter, suspended in physiologic solution of sodium chloride and preserved with 0.5 per cent phenol.

NICOTINIC ACID (See New and Nonofficial Remedies, 1940, p. 524).

The following dosage forms have been accepted:

Tablets Nicotinic Acid, 50 mg.
Prepared by Endo Products, Inc., Richmond Hill, N. Y.
Tablets Nicotinic Acid, 100 mg.
Prepared by Endo Products, Inc., Richmond Hill, N. Y.

SULFAPYRIDINE (See New and Nonofficial Remedies, 1940, p. 494).

The following product has been accepted:

Sulfapyridine-Smith-Dorsey.—A brand of sulfapyridine-N. N. R.

Distributed by the Smith-Dorsey Company, Lincoln, Neb. No U. S. patent or trademark.
Tablets Sulfapyridine-Smith-Dorsey, 0.5 Gm. (7.7 grains).

Council on Foods and Nutrition

ACCEPTED FOODS

THE FOLLOWING ADDITIONAL FOODS HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON FOODS OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO ACCEPTED FOODS.

FRANKLIN C. BING, Secretary.

PREPARATIONS USED IN THE FEEDING OF INFANTS, Fruits, Vegetables and other Preparations (*See* Accepted Foods, 1939, p. 185).

R. H. Macy & Company, New York.

MACY'S LILY WHITE BRAND CHOPPED BEETS.

Analysis (submitted by manufacturer).—Moisture 90.3%, total solids 9.7%, ash (including sodium chloride) 0.7%, sodium chloride 0.3%, fat (ether extract) 0.2%, protein (N × 6.25) 0.7%, crude fiber 0.6%, carbohydrates other than crude fiber 7.5%, calcium (Ca) 0.022%, phosphorus (P) 0.014%, iron (Fe) 0.0010%, manganese (Mn) 0.0005%, copper (Cu) 0.00006%, alkalinity number of salt-free ash (cc. N/1 HCl per gram ash) 16.1.

Calories.—0.35 per gram; 9.9 per ounce.

MACY'S LILY WHITE BRAND CHOPPED CARROTS.

Analysis (submitted by manufacturer).—Moisture 93.7%, total solids 6.3%, ash (including sodium chloride) 0.6%, sodium chloride 0.2%, fat (ether extract) 0.4%, protein (N × 6.25) 0.5%, crude fiber 0.6%, carbohydrates other than crude fiber 4.2%, calcium (Ca) 0.029%, phosphorus (P) 0.023%, iron (Fe) 0.0008%, manganese (Mn) 0.0004%, copper (Cu) 0.00004%, alkalinity number of salt-free ash (cc. N/1 HCl per gram ash) 15.3.

Calories.—0.22 per gram; 6.2 per ounce.

MACY'S LILY WHITE BRAND CHOPPED GREEN BEANS.

Analysis (submitted by manufacturer).—Moisture 93.0%, total solids 7.0%, ash (including sodium chloride) 0.7%, sodium chloride 0.3%, fat (ether extract) 0.7%, protein (N × 6.25) 1.1%, crude fiber 0.8%, carbohydrates other than crude fiber 3.7%, calcium (Ca) 0.029%, phosphorus (P) 0.041%, iron (Fe) 0.0010%, manganese (Mn) 0.0002%, copper (Cu) 0.00010%, alkalinity number of salt-free ash (cc. N/1 HCl per gram ash) 15.4.

Calories.—0.26 per gram; 7.8 per ounce.

MACY'S LILY WHITE BRAND CHOPPED SPINACH.

Analysis (submitted by manufacturer).—Moisture 94.4%, total solids 5.6%, ash (including sodium chloride) 1.4%, sodium chloride 0.7%, fat (ether extract) 0.5%, protein (N × 6.25) 1.1%, crude fiber 0.8%, carbohydrates other than crude fiber 1.8%, calcium (Ca) 0.140%, phosphorus (P) 0.020%, iron (Fe) 0.0030%, manganese (Mn) 0.0006%, copper (Cu) 0.00012%, alkalinity number of salt-free ash (cc. N/1 HCl per gram ash) 18.1.

Calories.—0.16 per gram; 4.54 per ounce.

MACY'S LILY WHITE BRAND CHOPPED PRUNES.

Analysis (submitted by manufacturer).—Moisture 71.5%, total solids 28.5%, ash (including sodium chloride) 0.7%, sodium chloride 0.02%, fat (ether extract) 1.9%, protein (N × 6.25) 0.7%, crude fiber 0.6%, carbohydrates other than crude fiber 24.6%, calcium (Ca) 0.024%, phosphorus (P) 0.030%, iron (Fe) 0.0025%, manganese (Mn) 0.0002%, copper (Cu) 0.00033%, alkalinity number of salt-free ash (cc. N/1 HCl per gram ash) 13.7.

Calories.—1.18 per gram; 33.5 per ounce.

MACY'S LILY WHITE BRAND CHOPPED LIVER SOUP WITH VEGETABLES AND CEREAL, canned chopped mixture of fresh beef livers, tomato juice, potatoes, carrots, unpolished rice, water, whole grain barley, celery, cabbage, barley flour, rice flour and salt.

Analysis (submitted by manufacturer).—Moisture 85.4%, total solids 14.6%, ash (including sodium chloride) 1.6%, sodium chloride 1.1%, fat (ether extract) 0.4%, protein (N × 6.25) 2.9%, crude fiber 0.3%, carbohydrates other than crude fiber 9.4%, calcium (Ca) 0.011%, phosphorus (P) 0.060%, iron (Fe) 0.0008%, manganese (Mn) 0.0003%, copper (Cu) 0.00047%, alkalinity number of salt-free ash (cc. N/1 HCl per gram ash) 8.8.

Calories.—0.53 per gram; 15.1 per ounce.

MACY'S LILY WHITE BRAND CHOPPED VEGETABLE SOUP WITH BEEF BROTH AND CEREAL, canned chopped mixture of tomato juice, beef broth, potatoes, carrots, unpolished rice, whole grain barley, celery, water, barley flour, rice flour, cabbage, salt and spinach.

Analysis (submitted by manufacturer).—Moisture 85.8%, total solids 14.2%, ash (including sodium chloride) 1.6%, sodium chloride 1.2%, fat (ether extract) 0.3%, protein (N × 6.25) 1.5%, crude fiber 0.3%, carbohydrates other than crude fiber 10.5%, calcium (Ca) 0.014%, phosphorus (P) 0.033%, iron (Fe) 0.0015%, manganese (Mn) 0.0003%, copper (Cu) 0.00012%, alkalinity number of salt-free ash (cc. N/1 HCl per gram ash) 10.8.

Calories.—0.51 per gram; 14.5 per ounce.

UNCLASSIFIED AND MISCELLANEOUS FOODS (*See* Accepted Foods, 1939, p. 351).

Chr. Hansen's Laboratory, Inc., Little Falls, N. Y.

JUNKET BRAND RENNET POWDER, MAPLE FLAVOR, consisting of sugar, arrowroot starch, flavor, calcium salt, rennet enzyme, with U. S. certified color added.

Analysis (submitted by manufacturer).—Moisture 0.8%, total solids 99.2%, ash 0.5%, fat (ether extract) 0.1%, protein (N × 6.25) 0.2%, sucrose 96.0%, starch (arrowroot) 1.5%, undetermined 0.9%.

Calories.—3.9 per gram; 111 per ounce.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, JUNE 21, 1941

STRIKES IN HOSPITALS

Recently Pittsburgh and Allegheny County in Pennsylvania have been subjected to an extraordinary manifestation in medical affairs: a strike among hospital workers associated with Local Union No. 255 of the State, County and Municipal Workers of America, affiliated with the Congress of Industrial Organizations. Activities included picketing, demonstrations, interference with the removal of patients who wanted to use taxicabs, and interference with the receipt of food and the removal of garbage. In a strike called at the West Penn Hospital on April 18, maids, orderlies and employees in the nurses' home, in the engineering division and in the garages were called out; there were threats of violence, actual violence and establishing of picket lines. The window of an ambulance leaving the hospital was smashed and, altogether, a serious situation was created affecting the lives and health of all the patients in the hospital. On April 19 a court of Allegheny County granted an injunction restraining the defendant and its members from interfering with, hindering or obstructing the conduct and operation of the West Penn Hospital. Previously THE JOURNAL has referred to a decision by the Supreme Court of the State of Pennsylvania, which said on Jan. 6, 1941:

> A hospital is not an industry. It has not been the custom in the past to unionize hospitals. The effect of unionization and attendant efforts to enforce demands would involve results far more sweeping and drastic than mere property rights.
>
> The questions of profits for the employer or wages for the employees are not alone involved. It is not merely a matter of suspending operations, ceasing work and stopping production, such as might be true in a steel mill or automobile factory. It is a question of protecting the health, safety and, in many cases, the very lives of those persons who need the service a hospital is organized to render.

Our government, through the President, has used the United States Army to put into operation an industry conceived to be necessary in the national defense emergency. The patients in a hospital are there in almost every instance because of conditions which constitute an emergency of another kind. Many of them are recovering from surgical operations; some of them are mothers who have given birth recently to children or who are about to give birth to children; some of them are little children who are being treated for serious conditions, including infectious diseases. The Supreme Court of the State of Pennsylvania was well advised when it said "a hospital is not an industry" and when it intimated that the use of the strike to enforce demands would involve "results far more sweeping and drastic than mere property rights." Recently a member in Congress arose to inquire why the violators of the law in the state of Pennsylvania were not prosecuted by the proper authorities of that state. Certainly here is a situation in which every power that the state possesses should be applied to protect the thousands of patients in the hospitals of Pittsburgh. Can it be that the state authorities are unwilling or incompetent to give these sick the protection that is their right?

Every one of the hospitals concerned is a nonprofit, public, charitable corporation. Not one of these hospitals is engaged in any trade or business, regardless of the point of view that has occasionally been expressed by some government officials. The concept that medicine is a trade and that the work of the hospital is a business is certain to lead to exactly the type of abuse which has developed in the state of Pennsylvania. Inevitably it will break down the morals and standards which have been applied to the care of the sick since time immemorial. In every religion held sacred by man the care of the sick is held to be a spiritual task. The type of savagery that permits leaders of labor to carry coercive technics into the work of the hospital may involve a responsibility that reaches high in the government not only of the state of Pennsylvania but also of the United States.

IRRADIATED ANTIVIRAL VACCINES

Recently Salk and his co-workers [1] of the Department of Bacteriology, New York University College of Medicine, have claimed that by proper adjustment of distance, intensity and length of exposure to ultraviolet radiation a nonviable influenza vaccine may be prepared which has proved to be a fully effective prophylactic agent for laboratory animals.

Following the discovery of ultramicroscopic viruses it was hoped that, by the use of heat-killed viruses or of viruses inactivated by chemical antiseptics, prophylactic vaccines might be prepared that would be effective against all virus diseases. Soon it became evident, however, that physically or chemically inactivated viruses are usually so altered in their biochemical properties as to be practically useless as immunizing agents. Applying newer methods of antigenic titration, for example, Webster and Casals [2] found that of forty-one commer-

1. Salk, J. E.; Lavin, G. I., and Francis, Thomas, Jr.: J. Exper. Med. **72**: 729 (Dec.) 1940.
2. Webster, Leslie T.: J. Exper. Med. **70**: 87 (July) 1939. Webster, L. T., and Casals, J.: J. Exper. Med. **71**: 719 (May) 1940.

cially available phenolized or chloroformed antirabic vaccines only eleven were of predictable clinical value; indeed, 75 per cent of their chemically inactivated viruses were without demonstrable immunizing power for mice. Tested on dogs, 50 per cent of the commercially available chloroformized vaccines were without demonstrable value. Over 90 per cent of the phenolized vaccines were antigenically inert. These percentages were recorded not only with vaccines prepared by nine different commercial firms but with different batches prepared by the same firm.

Because of evident difficulties in preparing chemically inactivated vaccines of predictable clinical value, the Rockefeller Institute bacteriologists [3] turned to the possibility of the successful preparation of nonviable antiviral vaccines by the use of ultraviolet radiation. When a rabies virus, for example, is exposed to a mercury vapor lamp under arbitrary standard conditions its virulence is gradually decreased, and it becomes completely noninfectious for mice by the end of about forty-five minutes. Mice repeatedly injected intraperitoneally with such nonviable irradiated vaccines usually acquire a specific immunity sufficient to resist a subsequent intracerebral injection of from 100 to 1,000 minimum lethal doses of the homologous living virus. This is in the neighborhood of ten times the average immunizing potency of the best chloroformized antirabic vaccine now available on the American market and nearly five hundred times the average immunizing potency of available phenolized vaccines.

Encouraged by these results, Salk and his co-workers applied a similar technic to the preparation of nonviable influenza vaccines. Two highly virulent strains of the virus of epidemic influenza were studied by the New York investigators; both viruses usually gave fatal infections in mice on the intranasal instillation of 0.05 cc. of a 1:10,000,000 dilution of the standard suspension. They found that the mouse infectivity of each influenza strain is completely destroyed after from nine to thirty minutes' exposure to a mercury vapor lamp. The immunity induced in mice by relatively large doses of this irradiated vaccine was practically the same as the maximum immunity resulting from sublethal infections. Quantitative titrations, however, afterward showed that this optimum is attained only with massive doses of the vaccine. Tested in minimum or threshold concentrations the irradiated vaccines were only about 1 per cent as effective as the same dose of the living virus. This discrepancy conceivably might be explained on the assumption that the living virus multiplies a hundred fold in the injected tissue before being inhibited by the immunizing process.

These encouraging results have stimulated a study of the possible application of the irradiation technics to the preparation of nonviable poliomyelitis vaccine and to the specific prophylaxis of yellow fever. The antigenic potency of the new irradiated influenza vaccines, however, has not yet been tested on man.

3. Hodes, H. L.; Webster, L. T., and Lavin, G. I.: J. Exper. Med. 72:437 (Oct.) 1940.

CONSERVATION OF MAN POWER IN CONNECTICUT

Two important elements must be considered in any plan for widespread extension of preventive industrial medicine and surgery to factories, mines, mercantile establishments and other industrial classifications. One is the creation of a demand for such service by plants of all types and sizes, and the other is assurance of ready availability of trained personnel competent to carry out the objectives of industrial health. Much carefully planned educational effort is needed both for physicians and for industrialists. Recent practical experience suggests that at least in the initial stages these two groups may be instructed together. Evidently by such practice each is likely to gain a better appreciation of the part the other must play if any appreciable results are to occur in the reduction of lost-time disability on a basis which the average employer can and will support. The National Association of Manufacturers recently sponsored a series of industrial health clinics in a number of typical industrial communities in which both physicians and employers participated and wherein both were instructed about the dividends to be realized in health and in economic advantage under a system of industrial health supervision. Following this general pattern, the Saginaw County Medical Society in Michigan undertook a similar successful conference on its own initiative, a procedure which can be recommended for adoption by the profession in other industrial centers.

These earlier activities have been followed by an even more encouraging series of developments in Connecticut, one of the country's foremost manufacturing centers. A program of helpful cooperation has been instituted between committees on industrial health in the state medical society and the manufacturers' association of Connecticut. Both committees have felt that, in relation to the current defense effort, extension and improvement of industrial mediums is both an opportunity and an obligation. A pamphlet has been prepared and issued by these two organizations directed at physician and employer alike as a first step in broadening acquaintance with the objectives and technics of industrial medical service. In effect, every plant manager in the state is invited to discuss with this joint committee the health problems of his plant and to discover through this method the most effective solution. Accessibility to a consulting service of this character, backed by such influential organizations, is a most reassuring development and a long step toward supplying small plants with needed industrial health control. An expectable effect should be the creation of a much wider demand for competent industrial medical service based on ade-

quate standards, ethically and scientifically. The Committee on Industrial Health in the Connecticut State Medical Society has already taken steps to see that physicians in that area will be in position to respond to these demands.

This example of civic and professional leadership is a proper function of the organized medical profession and a far reaching experiment in public relations. It deserves emulation by medical societies everywhere.

Current Comment

ANTI-GRAY HAIR VITAMIN DEFICIENCY IN FOXES

Whether or not the fox is especially susceptible to vitamin deficiency diseases may well be subject to investigation. In any event, one vitamin deficiency in these animals, called Chastek paralysis, has already been referred to in THE JOURNAL.[1] Perhaps these animals are particularly susceptible to deficiency of thiamine, for now Morgan and Simms [2] report observations on 6 young silver foxes, 3 of them placed on a purified diet supplemented by fish liver oil, wheat germ, riboflavin and nicotinic acid, and 3 others receiving the same diet with the addition of a yeast "filtrate factor." Of the first group, 1 died after twenty-six days and the other 2 lost most of their fur. At necropsy the fox that died and the other 2 on deficient diet, pelted four months later, showed large red mottled thymuses. The 3 foxes which received the filtrate factor retained their fur, had no surviving thymuses and had normal dark silver pelts. These observations tend to confirm previous facts noted in rats and dogs and suggest that there is a specific vitamin fraction in the B group which may be called, for the present, the anti-gray hair vitamin of foxes. No doubt the possible implication to gray hair in man will result in follow-up studies in the near future on this interesting deficiency disease in foxes.

ENSOL IN THE NEWS

THE JOURNAL has previously commented [1] on "Ensol," a preparation advocated for cancer by Dr. Hendry C. Connell of Kingston, Ont. It was pointed out that the results claimed by the promulgator were not dissimilar to those obtained with several other methods, e. g. by Coley's fluid, by various bacterial toxins, by injection of Witte's peptone or a number of similar foreign proteins. In 1935 THE JOURNAL warned that grief would inevitably result from the promotion of this uncontrolled product. Three years later eleven deaths were reported in Orlando, Fla., following the use of Rex, series 152—a form of Ensol which had been contaminated with tetanus organisms. Recently the Ontario Commission for the Investigation of Cancer Remedies made an equivocal report on the product and thereby stimulated renewed publicity. Newspaper reports seem to suggest that Ensol has been "approved" by the commission.[2] Because of inquiries received at the American Medical Association, a letter was sent by air mail to the commission in care of one of its members asking if the commission had issued the statements suggested. Although a month has elapsed since the mailing of this letter a reply has not yet been received. In 1935 the newspapers described Ensol as a "cancer cure"; now it is stated by Dr. Connell and the commission that they do not consider Ensol to be a "cure" but that benefit is sometimes derived from its administration. A brief comment in a recent issue of the *Canadian Medical Association Journal* [3] offers a more conservative attitude than is obtained by reading other journals but indicates that the commission grants Ensol has "produced beneficial results in a fairly large percentage of patients suffering from cancer." Fortunately the commission suggests that it is too early to vindicate the acceptance of Ensol in preference to other recognized procedures. Apparently the Canadian commission has "damned with faint praise." Nevertheless some patients with cancer in a stage which might be controlled by standard technic may demand the use of this doubtful product to the exclusion of more generally accepted procedures.

PRESCRIPTIONS

When the new Federal Food, Drug and Cosmetic Act was enacted, many doubted its effectiveness. Similar consideration was given to the Wheeler-Lea Amendment to the Federal Trade Commission Act, which became a law at about the same time. Now some figures have become available which seem to indicate clearly that such legislation is having a desirable effect. The *American Journal of Pharmacy* for January 1941 contains an item under the title "The Nation Takes Its Medicine," noting that prescription drugs and medicines showed an increase of $36,000,000 for 1939 over 1937 and that "patent" and proprietary medicines for public sale decreased $18,000,000 in value in the same period. The actual value of the prescription medicines in 1939 was $178,930,487. The value of "over the counter" medicines in that year was $166,577,263. Obviously, therefore, the permissible claims for "patent medicines" today are so restricted as to reduce their sale to the public, or the public is becoming better informed as to the advantages of employing ethical remedies and prescribed remedies. The *Drug and Cosmetic Industry* for December 1940 provides an analysis in its story "Ethicals Take Lead." Apparently vitamins showed the greatest gain, glandular preparations also advanced, and the use of biologic preparations was adversely affected by the popularity of sulfanilamide in infectious conditions. Education is making the public aware of the advantage of using ethical remedies and prescribed remedies. If, by action of the various federal agencies, the sales of "patent medicines" continue to decrease, a new day will dawn for the health of the American people. The health of the nation is an integral part of national defense.

1. A Deficiency Disease in Foxes, Current Comment, J. A. M. A. **116:** 234 (Jan. 18) 1941.
2. Morgan, A. F., and Simms, H. D.: Anti-Gray Hair Vitamin Deficiency in the Silver Fox, J. Nutrition **20:** 627 (Dec.) 1940.
1. The Connell Cancer Cure, editorial, J. A. M. A. **105:** 1122 (Oct. 5) 1935. Deaths from Ensol-Rex Cancer Treatment and Food and Drug Legislation, ibid. **110:** 1288 (April 16) 1938. Eleven Deaths from a Cancer Treatment, ibid. **110:** 1183 (April 9) 1938.
2. Bureau of Investigation, J. A. M. A. **116:** 2525 (May 31) 1941.
3. News Items, Canadian M. A. J. **44:** 96 (Jan.) 1941.

MEDICAL PREPAREDNESS

In this section of The Journal each week will appear official notices by the Committee on Medical Preparedness of the American Medical Association, announcements by the Surgeon Generals of the Army, Navy and Public Health Service, and other governmental agencies dealing with medical preparedness, and such other information and announcements as will be useful to the medical profession.

ARMY RESERVE OFFICERS ORDERED TO ACTIVE DUTY

WAR DEPARTMENT

The following additional medical reserve corps officers have been ordered to extended active duty by the War Department, Washington, D. C.:

ALPERN, Algernon Nathan, 1st Lieut., Pittsburgh.
BASS, John Burrell, 1st Lieut., Gadsden, Ala.
BAYON, Henry Joseph, Jr., Captain, New Orleans.
CALVERT, Hulin Elwin, Major, San Antonio, Texas.
CAPPELLER, William S., 1st Lieut., San Francisco.
CARDEY, Norman LeRoy, 1st Lieut., Winona, W. Va.
CASAMAS, Lawrence Vito, 1st Lieut., Brooklyn.
CHAPIN, Willard James, 1st Lieut., Perry, N. Y.
FOX, William Morgan, 1st Lieut., Columbia, S. C.
GLECKLER, John David, Major, San Antonio, Texas.
GOSS, Walter Alling, Jr., 1st Lieut., Chicago.
GRANT, Ben Ely, Major, Hollywood, Calif.
GRIFFIN, Ernest Pierce, Jr., 1st Lieut., Valhalla, N. Y.
HARMAN, Glen S., 1st Lieut., Santa Barbara, Calif.
HAWLEY, Carl John, 1st Lieut., Los Angeles.
HAYES, Dean M., 1st Lieut., Washington, D. C.
HEYER, Howard Eugene, 1st Lieut., Chicago.
HILL, Thurman Knight, 1st Lieut., Decatur, Ga.
INDERLIED, Herman Frederick, 1st Lieut., Portland, Ore.
INGALLS, George Samuel, 1st Lieut., Towson, Md.
IPPOLITO, Thomas Leonard, 1st Lieut., Glendale, L. I., N. Y.
JOEL, Samuel W., 1st Lieut., Washington, D. C.
JORDAN, Paul Hartley, 1st Lieut., Ann Arbor, Mich.
KANTHAK, Frank Folbert, 1st Lieut., Chicago.
KATZ, Harry Leon, 1st Lieut., Cleveland.
LEIGH, Cortland Dyal, 1st Lieut., Pittsburgh.
MARCH, Harry Nelson, Captain, Grass Valley, Calif.
MARSHAK, Richard H., 1st Lieut., New York.
MARSHALL, Frank Anton, Major, Weehawken, N. J.
MILLER, Cecil Ewing, 1st Lieut., Washington, D. C.
NORTON, William Ignatius, 1st Lieut., Oakland, Calif.
PRUCE, Arthur Marcel, 1st Lieut., Brooklyn.
RIEDEL, Henry Frank, Major, Portland, Ore.
SCHOPP, Alvin C., 1st Lieut., Shreveport, La.
SNYDER, Gordon Elias, 1st Lieut., New Milford, Pa.
SULT, Charles William, Jr., 1st Lieut., Phoenix, Ariz.
TUNICK, Arthur Mandel, 1st Lieut., New York.
TYLER, Gilman Rackley, 1st Lieut., Richmond, Va.
ZIMMERMAN, Richard P., 1st Lieut., Holsopple, Pa.

FIRST CORPS AREA

The following additional medical reserve corps officers have been ordered to extended active duty by the Commanding General, First Corps Area, which comprises the states of Maine, Vermont, New Hampshire, Rhode Island, Massachusetts and Connecticut:

ANDERSON, Justin L., 1st Lieut., Reading, Mass., Fort Oglethorpe, Ga.
BISHOP, Ernest W., 1st Lieut., East Providence, R. I., Fort Oglethorpe, Ga.
BREM, Jacob, Captain, Worcester, Mass., Maxwell Field, Ala.
CALCAGNI, Oscar H., 1st Lieut., Morrisville, Vt., Fort Barrancas, Fla.
FARRELL, Malcolm J., Captain, Waverley, Mass., Fort Devens, Mass.
FELDMAN, Raymond, Captain, Bedford, Mass., Camp Forrest, Tenn.
GOETHALS, Thomas R., Colonel, Boston, Governors Island, N. Y.
GUDGER, James R., Captain, West Hartford, Conn., Fort Oglethorpe, Ga.
LANDMAN, Louis, 1st Lieut., Northampton, Mass., Maxwell Field, Ala.
RICHTER, Waldemar G., Captain, Bedford, Mass., Fort Oglethorpe, Ga.
RUBENSTEIN, Abraham D., 1st Lieut., Brighton, Mass., Fort Oglethorpe, Ga.
SCHULER, James D., 1st Lieut., Boston, Fort Oglethorpe, Ga.
SMITH, Deering G., Captain, Nashua, N. H., Fort Oglethorpe, Ga.
WILLIAMS, Edward E., Major, Naugatuck, Conn., Fort Banks, Mass.
WITTIG, Joseph E., 1st Lieut., West Warwick, R. I., Fort Oglethorpe, Ga.
ZOLL, Paul M., 1st Lieut., Roxbury, Mass., Fort Oglethorpe, Ga.

THIRD CORPS AREA

The following additional medical reserve corps officers have been ordered to extended active duty by the Commanding General, Third Corps Area, which comprises the states of Pennsylvania, Virginia, District of Columbia and Maryland:

AVERILL, Roy Samuel, 1st Lieut., Pittsburgh, Fort George G. Meade, Md.
BARNHARDT, Russell Arthur, 1st Lieut., Pittsburgh, Carlisle Barracks, Pa.
BASTIEN, Henry Louis, Captain, Arlington, Va., Fort Belvoir, Va.
BUCKLAND, Wilmer Brundage, 1st Lieut., Philadelphia, Fort Eustis, Va.
COOPER, George, Jr., 1st Lieut., University, Va., Fort Eustis, Va.
DEAN, James Seay, Captain, Pennhurst, Pa., Fort Eustis, Va.
DUNKELBERGER, John Alfred, 1st Lieut., Philadelphia, Fort Bragg, N. C.
FERGUSON, Richard Butler, 1st Lieut., Baltimore, Fort Eustis, Va.
GABRIEL, Louis Thomas, Jr., 1st Lieut., Eldred, Pa., Fort Myer, Va.
HARTZ, William, Major, Philadelphia, Fort Belvoir, Va.
HINES, Herman Henry, Captain, State Farm, Va., Fort George G. Meade, Md.
KAUFMAN, William Henry, 1st Lieut., Charlottesville, Va., Fort Eustis, Va.
LIM, John Paul, Captain, Stroudsburg, Pa., Fort Myer, Va.
LOGAN, Thomas Megoawan, Captain, Philadelphia, Fort George G. Meade, Md.
MacMILLAN, Karl Donald, Captain, Oakmont, Pa., Headquarters Company, Washington, D. C.
OWEN, Robert Franklin, 1st Lieut., Washington, D. C., Fort George G. Meade, Md.
PARR, William Andrew, 1st Lieut., Baltimore County, Md., Fort Eustis, Va.
PAUL, John Sugden, 1st Lieut., Pittsburgh, Fort Myer, Va.
QUINONES-CHACON, Pascasio, 1st Lieut., Baltimore, Fort Eustis, Va.
REICHEL, Samuel Marvin, 1st Lieut., Annapolis, Md., Fort George G. Meade, Md.
ROGERS, William Harrison, 1st Lieut., Spring City, Pa., Fort George G. Meade, Md.
SCULL, Howard Myers, 1st Lieut., Philadelphia, Fort Myer, Va.
SNIDER, George Everett, 1st Lieut., Richmond, Va., Camp Lee, Va.

NINTH CORPS AREA

The following additional medical reserve corps officers have been ordered to extended active duty by the Commanding General, Ninth Corps Area, which comprises the states of Washington, Montana, Oregon, Nevada, Utah, California and Idaho:

ADAMS, Julius G., 1st Lieut., Friday Harbor, Wash., 56th Medical Battalion, Fort Lewis, Wash.
ANDLER, Maxwell M., 1st Lieut., Los Angeles, First Medical Regiment, Fort Ord, Calif.
BARNES, Myron C., 1st Lieut., Ontario, Calif., 3d Army Corps, Presidio of Monterey, Calif.
BARSHOP, Nathan, Captain, Los Angeles, Fort Rosecrans, Calif.
BOSSERT, Robert H., 1st Lieut., Burbank, Calif., Camp Roberts, Calif.
BRENNAN, John J., 1st Lieut., San Francisco, Camp Roberts, Calif.
BROCKBANK, Mark J., 1st Lieut., Price, Ida., 41st Division, Camp Murray, Wash.
CHERRY, Clifford B., 1st Lieut., Los Angeles, 3d Army Corps, Presidio of Monterey, Calif.
DAMRON, Milton H., Captain, M. R. C., Huntington, Park, Calif., Camp Seeley, Calif.
DOUGLAS, Wallace S., Captain, Lewiston, Ida., Fort Worden, Wash.
GUARDINO, Salvator J., 1st Lieut., M. R. C., Brisbane, Calif., Station Hospital Fort Lewis, Wash.
GUMMESS, Glen H., 1st Lieut., Los Angeles, Camp Roberts, Calif.
GUTEKUNST, Frederic W., 1st Lieut., San Bernardino, Calif., Camp Roberts, Calif.
HANSEN, Oscar J., 1st Lieut., Redding, Calif., 41st Division, Camp Murray, Wash.

HASLINGER, Joseph F., 1st Lieut., Portland, Ore., Station Hospital, Fort Lewis, Wash.
HAWKINS, Ralph L., Captain, San Francisco, Station Hospital, Fort Lewis, Wash.
HEIN, Walter F., Captain, Williams, Ariz., Moffett Field, Calif.
HOLT, C. Zeno, Colonel, Los Angeles, Reserve Officers Training Corps, University of California, San Francisco.
JAEKLE, Russell F., Captain, San Francisco, Camp Roberts, Calif.
KARLEEN, Philip E., Captain, M. R. C., Soquel, Calif., 7th Division, Fort Ord, Calif.
KIRCHDOERFER, Herman, 1st Lieut., Pasadena, Calif., Camp Roberts, Calif.
LING, Louis A., Captain, Deer Park, Wash., Northwest Air District, Fort George Wright, Wash.
MITCHELSON, David D. S., 1st Lieut., Los Angeles, Camp Roberts, Calif.
MONSERRATE, Domingo N., Major, Helena, Mont., Camp San Luis Obispo, Calif.
NOALL, Wendell, 1st Lieut., Ogden, Utah, 41st Division, Camp Murray, Wash.
PAWLEY, Ralph E., 1st Lieut., Indio, Calif., Camp Callan, Calif.
PERELSON, Harold N., 1st Lieut., Huntington Park, Calif., Camp Callan, Calif.
PEREZ, Eugene R., 1st Lieut., San Francisco, Camp Roberts, Calif.
PROFFITT, Josiah C., Captain, Seattle, Station Hospital, Fort Lewis, Wash.
RICHARDS, Ezra E., 1st Lieut., M. R. C., Burlingame, Calif., 7th Division, Fort Ord, Calif.
ROSE, William D., 1st Lieut., M. R. C., San Francisco, Camp Roberts, Calif.
ROVANE, John W., 1st Lieut., M. R. C., Poodland, Calif., Camp Roberts, Calif.
SASLAW, Lewis B., Captain, Stockton, Calif., Camp Roberts, Calif.
SELIGMAN, Lewis L., Captain, Dinuba, Calif., Fort Lewis, Wash., duty with Medical Service Troops.
SORENSON, Edward J., 1st Lieut., Beverly Hills, Calif., Corps Area Service Command, Fort Ord, Calif.
STUPPY, Laurence J., 1st Lieut., Hollywood, Calif., Southern California Recruiting District, Los Angeles.
SULLIVAN, James M., Major, San Francisco, Camp Roberts, Calif.
WALL, Edward C., 1st Lieut., Prineville, Ore., 155th Station Hospital, Camp Roberts, Calif.
WESSELL, Maurice S., Captain, Hamilton, Mont., Fort Worden, Wash.
WESTERHOUT, Charles E., Captain, Brea, Calif., 3d Army Corps, Presidio of Monterey, Calif.

ORDERED TO FOREIGN DUTY

BURNETT, Thomas Raynes, Major, Mission, Texas, Dutch Harbor, Alaska.
BYARS, Perry J. C., Jr., 1st Lieut., M. R. C., Lampasas, Texas, to Schofield Barracks, Honolulu, Hawaii.
EISNER, David George, 1st Lieut., M. R. C., Cleveland, to Station Hospital, Fort Buchanan, San Juan, Puerto Rico.
EPERJESSY, Ernest Zoltan, 1st Lieut., Johnstown, Pa., Fort Amador, Balboa, Canal Zone.
KENNEDY, Richard Loren, 1st Lieut., West Lafayette, Ind., Ponce Air Base, Ponce, Puerto Rico.
KNESE, Luke Ambrose, Captain, M. R. C., Billings, Mont., to Tripler General Hospital, Honolulu, Hawaii.
KOSTECKI, Walter Andrew, 1st Lieut., South Hanson, Mass., Sternberg General Hospital, Manila, Philippine Islands.
LEASUM, Charles, 1st Lieut., Sturgeon Bay, Wis., 12th Medical Regiment, Fort William McKinley, Philippine Islands.
LITTER, Leo, 1st Lieut., M. R. C., New York, to Station Hospital, Fort Buchanan, San Juan, Puerto Rico.
MILLER, Edward Simpson, 1st Lieut., M. R. C., Murphy, N. C., to Philippine Department, Fort Santiago, Manila, Philippine Islands.
PAUL, William Gordon, 1st Lieut., M. R. C., Durant, Okla., to Station Hospital, Fort Richardson, Anchorage, Alaska.
RININGER, Harold Casper, 1st Lieut., Rockport, Ind., Station Hospital, Fort Clayton, Canal Zone.
SANJURJO RAMIREZ, Luis Arturo, 1st Lieut., M. R. C., San Juan, Puerto Rico, to Station Hospital, San Juan, Puerto Rico.
SCHAUMLOFFEL, Roland Abraham, 1st Lieut., M. R. C., Los Angeles, to Ketchikan, Alaska.
STERN, Siegfried, 1st Lieut., M. R. C., New Rochelle, N. Y., to Borinquen Field, Puerto Rico.
STRAND, Clarence Johnson, Captain, M. R. C., Amherst, Neb., to Sternberg General Hospital, Manila, Philippine Islands.

SENIOR AND JUNIOR STUDENTS MAY BE COMMISSIONED IN ADMINISTRATIVE CORPS

The War Department has granted authority for male junior and senior medical students in grade A medical schools in the United States to be commissioned second lieutenants in the Medical Administrative Corps Reserve after July 1. Interns may be commissioned first lieutenants in the medical corps reserve with the understanding that they will be ordered to a year's active duty immediately after completing their internships. The granting of commissions to junior and senior students will exempt them from selective training and service and permit them to complete their medical education which might otherwise be interrupted; likewise, interns will be relieved of the possible interruption of their training. Students and interns who are properly qualified will be invited to submit applications for appointment, final approval in each case to be made by the War Department. Further instructions regarding the procedure to be followed will shortly be published.

GENERAL LOVE TO RETIRE

The War Department today announced that Brig. Gen. Albert G. Love, M. C., on duty in Washington, D. C., as assistant to the Surgeon General, would retire from active service on July 31 on account of reaching the statutory retirement age. His temporary appointment as brigadier general will be terminated on July 16, at which time he will revert to his permanent rank of colonel.

General Love was born in Trezevant, Tenn., and graduated from the University of Mississippi. He received his medical degree from the Memphis Hospital Medical College in 1904 and served a year as an intern in the U. S. Public Health Service. He then served as a contract surgeon in the United States Army from 1905 to 1906, after which he was appointed a first lieutenant in the medical corps of the regular army.

Prior to the World War General Love served as surgeon at various points in the United States, the Philippine Islands and Alaska. During and subsequent to the World War he was head of the Statistical Division in the Office of the Surgeon General, Washington, D. C. He prepared a medical history of the World War and published detailed statistical studies of war casualties. Since 1938 he has been chief of the Planning and Training Division in the Office of the Surgeon General.

GRADUATION OF STUDENT OFFICERS AT CARLISLE BARRACKS

Another class of 538 student officers of the various corps of the medical department of the army, including members of the Regular Army, the National Guard and the Reserves, graduated May 29 at the Medical Field Service School at Carlisle Barracks and were ordered returned to their various units throughout the country. This was the fifth refresher class of student officers to graduate recently at this school following a course which has been necessarily shortened because of the present emergency. General Addison B. Davis, who has recently been made assistant to the surgeon general, in presenting the diplomas to the graduates pointed out that the demand for trained medical department officers is urgent and is increasing in magnitude.

PROMOTION OF COLONELS DAVIS AND McAFEE

President Roosevelt has nominated Col. Addison D. Davis, M. C., to be assistant to the Surgeon General for four years, with rank of brigadier general, vice Brig. Gen. Roger Brooke, and Col. Larry B. McAfee, M. C., to be assistant to the Surgeon General for four years, with rank of brigadier general, vice Brig. Gen. Raymond F. Metcalfe.

NEW GARMENTS FOR PATIENTS

A maroon colored garment for patients in army hospitals has been approved, it is reported, replacing the former drab garments. In addition to the more cheerful aspect, the new garments are handy for the patients while they are convalescing, as there are no buttons on the robes and they have side pockets to carry personal items.

ORGANIZATION SECTION

PROCEEDINGS OF THE CLEVELAND SESSION

MINUTES OF THE NINETY-SECOND ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, HELD IN CLEVELAND, JUNE 2-6, 1941

HOUSE OF DELEGATES

Second Meeting—Tuesday Morning, June 3

The House of Delegates was called to order at 9:45 a. m. by the Speaker, Dr. H. H. Shoulders.

Roll Call

On motion of Dr. Arthur T. McCormack, Kentucky, seconded by Dr. Walter E. Vest, West Virginia, and carried, the House dispensed with the roll call.

Presentation of Minutes

Dr. Arthur T. McCormack, Kentucky, moved that the House dispense with the reading of the minutes. The motion was seconded by Dr. John Z. Brown, Utah, and carried.

Report of Reference Committee on Credentials

Dr. G. Henry Mundt, Chairman, reported that one hundred and sixty-four delegates had registered and been seated. He asked approval of the House of Delegates for the action of the reference committee in seating the assistant secretary of the Rhode Island Medical Society in the absence of the regularly elected delegate and alternate, and in seating a delegate designated by the president of the South Carolina Medical Association because of the absence of a regularly elected delegate of that association and his regularly elected alternate.

On motion of Dr. Edward M. Pallette, California, seconded by Drs. Arthur J. Bedell, Section on Ophthalmology, and Arthur T. McCormack, Kentucky, and carried, the House approved of the action of the reference committee in seating the assistant secretary of the Rhode Island Medical Society.

The action of the reference committee in seating the one designated by the president of the South Carolina Medical Association was approved on motion of Dr. E. G. Wood, Tennessee, seconded by Dr. Walter E. Vest, West Virginia, and carried after discussion by Drs. Arthur T. McCormack, Kentucky, and Olin West, Secretary.

Report of Committee on Medical Preparedness

Dr. Irvin Abell, Chairman, presented the following report, which was referred to the Reference Committee on Executive Session:

REPORT OF THE COMMITTEE ON MEDICAL PREPAREDNESS

To the Members of the House of Delegates of the American Medical Association:

At the annual session of the American Medical Association held in New York, June 10 to 14, 1940 the Board of Trustees submitted to the House of Delegates at its first meeting on June 10 resolutions providing for the appointment of a Committee on Medical Preparedness which, when created, should "establish and maintain contact and suitable relationship with all governmental agencies concerned with the prevention of disease and the care of the sick, in both civil and military aspects, so as to make available at the earliest possible moment every facility that the American Medical Association can offer for the health and safety of the American people and the maintenance of American democracy." At the same meeting of the House of Delegates, Lieut. Col. George C. Dunham, member of the House representing the Medical Corps of the United States Army, submitted a "tentative plan for the procurement of professional personnel for the Medical Corps of the Army in the event of a national emergency."

The resolutions of the Board of Trustees and the statement submitted by Colonel Dunham were referred to the Reference Committee on Executive Session. The reference committee reported to the House of Delegates in executive session on Tuesday, June 11, and recommended that the resolutions submitted by the Board of Trustees be amended to include the Chairman of the Board as a member ex officio of the proposed Committee on Medical Preparedness, and that the Committee should be appointed by the Speaker of the House. The resolutions with the amendments offered were adopted by the House of Delegates. At a later meeting of the House of Delegates the Reference Committee on Executive Session presented a second report in which it was recommended that the Committee on Medical Preparedness be composed of ten members of the House of Delegates with the President of the Association, the Chairman of the Board of Trustees, the Secretary of the Association, the Secretary of the Board of Trustees and the Editor of THE JOURNAL as members ex officio. The recommendations of the reference committee were adopted by the House, and the Committee on Medical Preparedness was duly appointed on June 13, 1940.

MEETINGS OF THE COMMITTEE

The first meeting of the Committee was held immediately after adjournment of the House of Delegates on June 13, 1940. Other meetings were held July 19, Sept. 20 and Nov. 23, 1940 and Feb. 15, 1941. At these meetings the Medical Corps of the United States Army, the Medical Corps of the United States Navy and the United States Public Health Service have been officially represented, and the representatives of these government services have been most gracious and generous in extending aid to the Committee. The Selective Service System was represented at two meetings by Lieut. Col. Charles B. Spruit, who offered information and counsel of the most helpful nature. At the meeting held on Feb. 15, 1941 the members of the Subcommittee on Medical Education of the Health and Medical Committee of the Federal Security Agency were present, as were members of the Council on Medical Education and Hospitals.

CONFERENCE ON MEDICAL PREPAREDNESS

On Sept. 20, 1940 a conference was held under the auspices of this committee at the Association's offices in Chicago. This conference was attended by the state chairmen of the Committee on Medical Preparedness from forty-five states and the District of Columbia and by representatives of two state chairmen who could not themselves attend because of illness. There were also present official representatives of the Medical Corps of the Army and of the Navy, the United States Public Health Service and the Selective Service System, members of the Board of Trustees of the American Medical Association and several members of official personnel of constituent state medical associations.

CONFERENCES WITH GOVERNMENT OFFICIALS

On numerous occasions representatives of this committee have conferred in Washington, D. C., or at the Association's offices with government officials concerned with various phases of the national defense program. Individual members of the Committee have maintained official contact with Corps Area Surgeons in their respective areas and have attempted to be as helpful as possible to these most important officers.

STATE CHAIRMEN AND STATE AND COUNTY COMMITTEES

As soon as possible after the creation of the Committee on Medical Preparedness, each constituent association was requested to select some one of its members to serve as state chairman of the Committee. This request was promptly complied with, and a splendid group was quickly organized to represent the Committee in the major political divisions of the United States. The state chairmen have rendered invaluable service, without which it would have been impossible for this Committee to perform many of the duties assigned to it by the House of Delegates.

Constituent state medical associations and many component county and district medical societies have organized preparedness committees, and these have contributed splendidly to the success that has thus far been attained in the major undertakings of this Committee and its state chairmen.

SURVEY OF MEDICAL PERSONNEL

The major task assigned to the Committee by the House of Delegates involved an attempt to make a complete survey of medical personnel of the nation to determine the number of physicians available for service in various capacities and to develop facts that would be useful in aiding the profession to render the greatest possible service in any national emergency that might develop.

Among the objectives which the Committee hopes and expects to attain as fully as possible through this nationwide survey are (1) the number of physicians licensed to practice medicine, (2) the number capacitated for active service and the number of those incapacitated, (3) the number and location of physicians who may be qualified and available for service with the military forces of the nation and for other essential governmental services in case of national emergency, (4) the number available for service to the civilian population under emergency conditions, (5) the availability and qualifications of those who can serve acceptably in special fields of medicine, (6) the number and identity of physicians qualified for teaching and research who are believed to be essential for the proper maintenance of educational institutions and (7) the number and identity of physicians already engaged in government services.

QUESTIONNAIRES FOR SURVEY PURPOSES

For the purposes of a survey of such extensive and intensive nature, it was essential that information should be secured from the individual physician, and a questionnaire was prepared and submitted for criticism and suggestion to various qualified persons including the Surgeon General of each of three medical services of the federal government. It was not possible to include in the questionnaire all the items suggested since to do so would have necessitated the use of two cards for each physician and would have seriously retarded the compilation of data.

When the questionnaire was finally approved and prepared for distribution, a copy was sent with explanatory statements to every physician in the United States, its territories and possessions whose names and addresses were available. There is a surprisingly large movement of physicians even under normal conditions. The first mailings were made at a time of year when there were many changes of address, and consequently there was some delay in getting the schedules into the hands of some physicians. The total number of questionnaires distributed is in excess of 180,000, of which 150,407, or 82.9 per cent, had been filled in and returned by physicians in the United States as of April 1, 1941. Of the physicians in the territories and possessions, 1,571 have returned their questionnaires as of April 1, 1941, a return of 31.7 per cent.

While completed questionnaires are still being received, it may be that the total number of returns will not be greatly increased. Some physicians have mislaid the forms received or have been careless about returning them, and some because they are already engaged in government service or because they have retired or are incapacitated have assumed that it is not necessary to return the questionnaires. Others have perhaps failed to receive the schedules because of changes of address. A few have refused to cooperate in the survey.

It is highly important that every physician in the nation participate in this survey, through which an opportunity is offered to compile data of the greatest immediate importance as well as of great historical value. If the information secured is properly utilized, it should be possible to provide necessary medical service for the military forces now on duty and for expanded forces in case of deepened emergencies with the least possible interference with the needs of the civilian population and of those of essential medical institutions.

COMPILATION OF DATA

The duty of collecting and compiling data secured through the survey was assigned by the Board of Trustees to the Bureau of Medical Economics. Practically every department in the offices of the Association has actively participated in promoting the work of the Committee on Medical Preparedness. Moreover, several independent scientific organizations have graciously offered cooperation, and their official representatives have rendered invaluable aid in various ways.

Questionnaires returned by individual physicians have been checked and edited as rapidly as possible for the purpose of transferring data to punch cards so that information can be readily provided, on demand, for the use of official agencies and for other essential purposes. For some time after the survey was initiated, it was necessary to "query" about 40 per cent of the questionnaires returned in order to secure more complete and more accurate data. On April 1 of the current year 138,263 punch cards had been prepared, and the process will be continued until fully completed.

SPECIAL LISTINGS

Listings of various groups in the profession have been partially prepared, and these will be completed when all questionnaires returned have been properly checked and available data transferred to punch cards.

The first listing was of general practitioners. From the available punch cards, arranged according to type of practice, it appears that 55,811 physicians are in general practice and that 78,960 devote special attention to some type of limited practice. Data obtained from 95,000 punch cards show that 12,604 physicians reported that they held commissions in medical corps. Of this number, 812 are members of the Medical Corps and 9,126 of the Medical Reserve Corps of the Army; 443 are members of the Medical Corps and 990 of the Medical Reserve Corps of the Navy; 789 are members of the Medical Corps of the National Guard, and 444 are officers of the Public Health Service. Additions are constantly being made to the Medical Reserve Corps and an unknown number of commissioned officers have resigned, so that, as this report is being prepared, the present strength is not known to the Committee on Medical Preparedness.

Listings of specialists in various fields of medicine have been made, and the Committee has received from organizations composed of specialists most valuable aid in an attempt to determine the availability and qualifications for special services.

An effort has been made to determine the number and locations of physicians qualified to serve in the field of industrial health, and the Council on Industrial Health has cooperated in this undertaking. A special questionnaire for this purpose was sent to 10,158 physicians, and 6,472 of these have been returned. As far as can be determined from available data, 1,177 physicians devote their full time to activities of various kinds in this particular field, 1,438 give more than half their time and 1,471 devote less than half their time to some phase of industrial health.

Other special listings are in course of preparation, including those pertaining to health officers and associated personnel, women physicians, incapacitated physicians and other groups.

ASSISTANCE OF THE AMERICAN MEDICAL ASSOCIATION IN CLASSIFICATION AND PROCUREMENT OF PHYSICIANS FOR MILITARY SERVICE

The Adjutant General of the Army has sent the following instructions to the Surgeon General and to each corps area and department commander:

1. The following plan has been approved and will be placed in operation at such time as the War Department may direct.

(*a*) The American Medical Association will prepare and maintain a roster of civilian physicians, classified as to profes-

Statistical Report, Census of Physicians, as of April 1, 1941

	States by Corps Areas	Number of Physicians, A. M. Directory June 1, 1940	New Names Added to April 1, 1941	Total Number of Physicians as of April 1, 1941	Number of Schedules Received as of April 1, 1941	Per Cent of Schedules Received April 1, 1941	Schedules Yet to Come *	Incomplete Schedules †	Number of Physicians Reported Deceased Since June 1940
I	Connecticut	2,598	115	2,713	2,334	86.0	283	96	38
	Maine	992	18	1,010	819	81.1	128	63	29
	Massachusetts	7,889	317	8,206	5,632	68.6	2,193	381	138
	New Hampshire	656	9	665	660 [5]	99.2	.....	27	16
	Rhode Island	961	18	979	858	87.6	94	27	12
	Vermont	523	8	531	516	97.2	8	7	11
	Total	13,619	485	14,104	10,819	76.7	2,706	601	244
II	Delaware	339	19	358	297	83.0	56	5	5
	New Jersey	5,813	257	6,070	4,647	76.6	1,288	135	80
	New York	27,396	1,015	28,411	22,590	79.5	5,141	680	336
	Total	33,548	1,291	34,839	27,534	79.0	6,485	820	421
III	District of Columbia	2,243	116	2,359	1,332	56.5	920	107	39
	Maryland	2,988	178	3,166	3,060	96.7	70	36	42
	Pennsylvania	13,529	535	14,064	10,615	75.5	3,013	436	258
	Virginia	2,889	62	2,951	2,506	84.9	364	81	70
	Total	21,649	891	22,540	17,513	77.7	4,367	660	409
IV	Alabama	2,075	31	2,106	2,132 [1]	100.0	...	...	62
	Florida	2,276	28	2,304	2,215 [3]	96.1	...	127	67
	Georgia	2,825	78	2,903	2,397	82.6	505	1	77
	Louisiana	2,464	234	2,698	1,990	73.8	645	63	57
	Mississippi	1,497	4	1,501	1,313	87.5	155	33	40
	North Carolina	2,740	47	2,787	2,083	74.7	632	72	58
	South Carolina	1,402	32	1,434	1,329	92.7	58	47	32
	Tennessee	2,908	103	3,011	2,426	80.6	485	100	80
	Total	18,187	557	18,744	15,885	84.7	2,480	443	473
V	Indiana	4,132	117	4,249	4,013	94.4	142	94	97
	Kentucky	2,761	54	2,815	2,802 [4]	99.5	...	25	68
	Ohio	9,318	324	9,642	8,545	88.6	762	335	183
	West Virginia	1,834	29	1,863	1,576	84.6	239	48	38
	Total	18,045	524	18,569	16,936	91.2	1,143	502	386
VI	Illinois	12,188	495	12,683	10,211	80.5	1,988	484	246
	Michigan	6,362	251	6,613	5,070	76.7	1,341	202	114
	Wisconsin	3,523	98	3,621	2,772	76.6	728	121	61
	Total	22,073	844	22,917	18,053	78.8	4,057	807	421
VII	Arkansas	1,829	26	1,855	1,783	96.1	30	42	59
	Iowa	3,084	48	3,132	3,102	99.0	21	9	63
	Kansas	2,070	38	2,108	1,813	86.0	156	139	34
	Minnesota	3,527	122	3,649	3,360	92.1	247	42	46
	Missouri	5,297	228	5,525	4,562	82.6	721	242	136
	Nebraska	1,635	41	1,676	1,568	93.6	108	..	33
	North Dakota	518	9	527	490	93.0	28	9	9
	South Dakota	508	2	510	515 [6]	100.0	..	..	9
	Wyoming	274	1	275	261	94.9	8	6	5
	Total	18,742	515	19,257	17,454	90.6	1,319	489	394
VIII	Arizona	594	13	607	611 [2]	100.0	..	1	6
	Colorado	1,964	54	2,018	1,719	85.2	31	268	39
	New Mexico	439	2	441	388	88.0	47	6	6
	Oklahoma	2,352	26	2,378	2,142	90.1	153	83	51
	Texas	6,898	158	7,056	5,843	82.8	733	480	172
	Total	12,247	253	12,500	10,703	85.6	964	838	274
IX	Alaska	74	..	74	55	74.3	19	...	...
	California	11,909	390	12,299	10,480	85.2	1,374	445	218
	Idaho	423	6	429	382	89.0	38	9	8
	Montana	537	10	547	477	87.2	51	19	16
	Nevada	167	1	168	121	72.0	36	11	3
	Oregon	1,461	35	1,496	1,388	92.8	108	..	28
	Utah	575	22	597	532	89.1	55	10	9
	Washington	2,200	71	2,271	2,075	91.4	165	31	35
	Total	17,346	535	17,881	15,510	86.7	1,846	525	317
Total for United States		175,456	5,895	181,351	150,407 [7]	82.9	25,367	5,685	3,339
	Canal Zone	216	15	231	140	60.6	91	..	1
	Hawaii	455	6	461	324	70.3	137	..	6
	Philippines	3,445	300	3,745	801	21.4	2,944	..	18
	Puerto Rico	473	12	485	300	61.9	185	..	1
	Miscellaneous colonial	30	..	30	6	20.0	24	..	..
	Total	4,619	333	4,952	1,571	31.7	3,381	..	26
Grand total		180,075	6,228	186,303	151,978 [7]	81.6	28,748	5,685	3,356

1. 26 schedules apparently forwarded from Alabama but which probably should have been credited to other states.
2. 5 schedules apparently forwarded from Arizona but which probably should have been credited to other states.
3. 38 schedules apparently forwarded from Florida but which probably should have been credited to other states.
4. 12 schedules apparently forwarded from Kentucky but which probably should have been credited to other states.
5. 22 schedules apparently forwarded from New Hampshire but which probably should have been credited to other states.
6. 5 schedules apparently forwarded from South Dakota but which probably should have been credited to other states.
7. This figure includes the summation of notes 1 to 6 as they should be spread over the entire country.

* Figures in this column change constantly with the addition of new names and the movement of physicians from one state to another.

† The numbers in this column represent the schedules for which only incomplete information could be secured either by the State Medical Preparedness Committee or from the American Medical Directory. These schedules were prepared, with the information available, for some physicians who because of age, physicial condition or other reasons did not file a schedule themselves.

sional specialties and proficiency, who have agreed to accept commissions in the Army of the United States when needed for immediate active duty during a national emergency.

(*b*) The Surgeon General will designate one or more medical officers of the Regular Army who will be placed on duty at Headquarters, Sixth Corps Area, as representatives of his office in all matters pertaining to the Medical Corps Reserve and the American Medical Association.

(*c*) Corps area commanders will report, at times specified by the War Department, the number of Medical Corps Reserve officers under their assignment jurisdiction who are available for active duty.

(*d*) Vacancies in allotments made to any corps area by the War Department that cannot be filled by the detail of a qualified Reserve officer under the assignment jurisdiction of the corps area commander will be promptly reported to the War Department, which will cause them to be filled from Medical Corps Reserve officers in the Army and Service Assignment group, or by adding these vacancies to the allotment of other corps areas having a surplus.

(*e*) If no qualified Reserve officer can be found, the Surgeon General will notify his representative at Headquarters, Sixth Corps Area, as to the qualifications desired and the location and grade of the vacancy. The representative will then secure recommendations from the American Medical Association and forward all information to the appropriate corps area commander, notifying the War Department of the action taken. The corps area commander will immediately cause the candidate to be given a physical examination and, if found qualified, will secure from the applicant a properly completed application for commission (W. D., A. G. O. form 170). All papers will then be forwarded to the Adjutant General for final action by means of air mail and "Immediate Action" stationery when necessary.

(*f*) Corps area commanders are not authorized to grant waivers for physical defects in these instances but may reject a candidate when found physically disqualified, notifying the Adjutant General of the action taken.

(*g*) On receipt of a properly executed oath of office, the corps area commander will cause orders to be issued placing the appointee on immediate active duty.

(*h*) No appointments will be made under this authority of applicants over 55 years of age.

(*i*) The appearance of the candidate before an examining board as prescribed in AR 140-5 will be waived in these cases.

2. The Surgeon General and corps area and department commanders will complete all arrangements necessary to place the plan in operation without delay when directed by the War Department.

NUMBER OF PHYSICIANS AVAILABLE FOR MILITARY SERVICE AND FOR SERVICE TO CIVILIAN POPULATION

It was proposed in the plan outlined by Colonel Dunham at the New York session that an attempt be made to ascertain how many and what physicians in states and counties may be available for service with the military forces and for service at home. It is not believed that any but those who know conditions which actually exist in the individual states, counties and communities can properly undertake to perform such a task. The Committee on Medical Preparedness has, therefore, turned to the state chairmen and state and county committees for aid in this difficult and delicate matter.

In some instances, state and county committees have been disinclined to designate any physician as one who should serve in one capacity and another who should remain at home. The Committee on Medical Preparedness can fully appreciate this feeling and, where it is known to exist, has asked that an estimate be made of the number of physicians who may be now or who may later become available for military service and the number believed to be essential for service at home. It appears to be difficult to make such estimates pertaining to large cities.

Through the splendid aid of state chairmen and of state and county committees, good progress is being made in the undertaking referred to in this section of this report.

STATUS OF MEDICAL STUDENTS, INTERNS AND TEACHING PERSONNEL

It is essential for the public interest and for the purposes that may develop in any great national emergency that a constant supply of well qualified young physicians should be assured. It is necessary too that our hospitals shall be enabled to function in the most efficient manner possible. A period of intern training is required for graduation by a number of the recognized schools of medicine, and good intern service is essential to the successful operation of the modern hospital with any considerable bed capacity and occupancy. It is, of course, necessary that the teaching forces of medical institutions shall be maintained to the highest possible point of efficiency under any conditions that may obtain. In the Selective Service Act there is no provision for the deferment of medical students beyond the termination of the current college year. Interns may be deferred until the completion of their current term of training. No provision has been made for the deferment of residents in hospitals.

The Committee on Medical Preparedness has given careful and continued consideration to these matters. One of the Committee's first official acts was to adopt and to forward to various high officials of the federal government a resolution urging that arrangements be made under which our medical schools could continue to operate to the highest possible advantage; that medical students, interns and residents be permitted to complete their training in schools and hospitals, and that neither the student bodies nor essential teaching personnel be depleted to an extent that would interfere with the production of an adequate supply of well trained graduates each year. These recommendations of the Committee have been renewed from time to time and have received the support of the Council on Medical Education and Hospitals, of the Subcommittee on Medical Education of the Health and Medical Committee of the Federal Security Agency and of other important groups.

Suggestions have emanated from some sources to the effect that classes in medical schools should be enlarged. This Committee is not in accord with such suggestions for reasons that are, no doubt, perfectly obvious to the members of the House of Delegates.

SELECTIVE SERVICE SYSTEM ACTS TO DEFER MEDICAL STUDENTS AND INTERNS

As this report was being prepared, the following statement was released to the press by the Selective Service System:

To meet a "growing national shortage of physicians and surgeons," reported by the Office of Production Management, a policy of deferment from military training of individual medical students "who give reasonable promise of becoming acceptable medical doctors" was proclaimed, May 4, by Brig. Gen. Lewis B. Hershey, deputy director of Selective Service. These deferments should be continued in each case as long as the student is progressing satisfactorily, he said.

General Hershey's memorandum, which summarizes the report of the OPM, was sent to all state Selective Service directors for communication to their local boards. It stresses the OPM statement that the shortage of physicians and surgeons affects both the nation's armed forces and the civilian population and that the utmost care must be exercised to meet both needs.

Local boards are urged to see that, while no practicing physician whose services are necessary to his community is called for military service, the requirements of the armed forces for physicians and surgeons also are filled. It also is stressed that where physicians, including interns, are eligible for military service they should be encouraged to apply for Medical Reserve Corps commissions, but that they will be inducted if they are placed in class I-A and fail to take advantage of the opportunity to be commissioned. In the case of interns it was pointed out that, if commissioned, they will be deferred from active duty by the War Department to complete one year's internship.

Summarizing the OPM report on its study of the situation, General Hershey pointed out that it indicates a present need of around 9,000 medical officers for the Army, Navy, Public Health Service and Veterans Administration in addition to present staffs. This approximates a reduction of about 5 per cent in the number of physicians now available for service in

civilian life, and it is estimated that the further demand caused by health problems in communities expanded by new defense industries will increase this civilian need to about 10 per cent.

In addition to the 9,000 additional medical officers required by the Army, Navy and other defense agencies, General Hershey said the OPM report showed a probable annual turnover of around 3,500 because of retirement of regular medical officers and the expiration of tours of duty of reserve medical officers.

The OPM report estimates that there are 155,000 practicing physicians in the United States, of whom about 27,000 are 65 years of age or older, and the mortality is around 3,800 a year. Their places can be filled only by medical graduates who enter the profession each year and their number is estimated at approximately 5,000, of whom only 60 to 65 per cent probably would be qualified physically or otherwise for military service.

Commenting on this situation in announcing the Selective Service policy of deferring medical students who are making satisfactory progress in their professional training, General Hershey's memorandum to state directors stated:

> There are no replacements for medical students who are withdrawn from school. Consequently if the supply of medical students who are to be graduated into the medical profession is reduced through their induction to serve in a nonprofessional capacity, an increasing reduction of physicians available for military service as well as an aggravation of the increasing overall national shortage will result.

As an outline of policy and procedure for the Selective Service System concerning medical students, General Hershey quoted the OPM report:

> It is of paramount importance that the supply be not only maintained but encouraged to grow, and that no student or intern who gives reasonable promise of becoming an acceptable medical doctor be called to military service before attaining that status.

Local boards were cautioned, however, that deferment is not an exemption and that the obligation and liability for military service remain on its expiration.

General Hershey's memorandum also called attention to a previous one, issued on April 22, prescribing procedure for deferment of individual students in a number of specialized professional fields which were suggested by the Office of Production Management. This memorandum suggested procedure for presenting local boards with detailed facts concerning individual students, which was prepared by the American Council of Education and concurred in by National Headquarters of the Selective Service System. As set forth in a bulletin (number 10) issued by the council, this provides for getting into the hands of the local board of a "student statement of information" concerning his status and plans, and an affidavit by his college or university in which the college officials testify as to his standing, courses and occupational objectives, together with a general evaluation of the student as a "necessary man" for occupational deferment.

ESSENTIAL TEACHERS

At the request of the Committee on Medical Preparedness, the deans of medical schools have been asked, through the Council on Medical Education and Hospitals, to provide lists of personnel believed to be essential for teaching purposes.

MEDICAL EXAMINERS AND MEMBERS OF BOARDS

A large number of physicians are serving as examiners for draft boards and as members of advisory, induction and appeal boards and in other capacities under the Selective Service Act. Medical examiners and members of advisory and appeal boards serve without compensation. The exact number of those engaged in such service is not known to the Committee at this time.

There have been complaints that in some instances medical examiners have been required to devote an undue amount of time to their duties in such capacity. In many places alternate examiners have been appointed to share the work, and in some instances resident physicians have offered their services so that the work involved might be equably spread. In some areas alternates have been appointed to serve as members of induction boards so that no member would be required to give his entire time during examination periods. In some cities all examinations of registrants are conducted in hospitals, and this arrangement seems to have been satisfactory to all concerned.

SOURCE OF SUPPLY OF MEDICAL OFFICERS

Physicians for service as medical officers can now be secured only from the Medical Reserve Corps. Students approaching graduation at recognized schools and interns who will complete their training within a specified time may apply for commissions and, if eligible, may receive commissions in the Medical Reserve Corps, and assignments to extended active duty may be deferred until courses of training are completed.

COMMITTEES CONCERNED WITH THE NATIONAL DEFENSE PROGRAM AND OTHER ACTIVITIES

The Health and Medical Committee of the Federal Security Agency is composed of Dr. Irvin Abell, Chairman; Major General James C. Magee, Surgeon General of the United States Army; Rear Admiral Ross T. McIntire, Surgeon General of the United States Navy; Dr. Thomas Parran, Surgeon General of the United States Public Health Service, and Dr. Lewis H. Weed, Chairman of the Division of Medical Sciences of the National Research Council. This Committee was originally appointed by Executive Order "To advise the Council of National Defense regarding the health and medical aspects of National Defense and to coordinate health and medical activities, affecting national defense." Other purposes to be served by the Health and Medical Committee were designated. At a later time the committee was transferred, by Executive Order, to the Federal Security Agency.

The National Research Council, cooperating with the federal government, has created a number of committees concerned most largely with various scientific aspects of the national defense program. Dr. Morris Fishbein, an ex officio member of the Committee on Medical Preparedness, is a member of the Executive Committee of the Division of Medical Sciences of the National Research Council and Chairman of the Committee on Information of that Division.

There seemed to be need for the publication of a special journal pertaining to military medicine, and the Board of Trustees authorized the publication of a periodical to be known as WAR MEDICINE. The active cooperation of the Division of Medical Sciences of the National Research Council has been generously extended in making possible the publication of this new periodical, which has been received with great interest in the United States and has attracted attention from official and unofficial sources in other countries.

The Chairman of the Council on Foods and Nutrition of the American Medical Association is serving as chairman of the Subcommittee on Nutrition of the Division of Medical Sciences of the National Research Council.

A National Conference on Nutrition is to be held in Washington, D. C. The Board of Trustees and the Council on Foods and Nutrition have assured the President of the United States and the Federal Security Administrator of active cooperation in this movement.

Dr. R. G. Leland, Director of the Bureau of Medical Economics, has served as a member of a committee of the Division of Vital Statistics of the Bureau of the Census and as a member of a committee of the Selective Service System and has cooperated with the Office of Procurement and Management. Conferences have been held with representatives of the National Resources Planning Board relative to the maintenance of lists of specialists in the basic medical sciences.

The Committee on Medical Preparedness of the American Medical Association has maintained the closest possible contact with the aforementioned committees, and most pleasant and cooperative relations have resulted.

PENDING FEDERAL LEGISLATION

A number of bills pertaining to one or another phase of the national defense program have been submitted to the Congress now in session. Senate Bill 783, introduced by Senator Murray of Montana, provides, among other things, that (1) students who are preparing for the degree of doctor of medicine or bachelor of medicine at medical schools, (2) students who are

preparing for the degree of doctor of dental surgery or doctor of dental medicine at dental schools, (3) hospital interns and resident physicians and surgeons who are graduates of medical schools and are eligible as such graduates for the examinations given by the National Board of Medical Examiners or who were so eligible at the time of their graduation at such medical schools, (4) hospital dental interns and resident dentists who are graduates of schools of dentistry or hold degrees of doctor of dental surgery or doctor of dental medicine, and (5) teachers at medical and dental schools shall be exempt from training and service but not from registration under the Selective Training and Service Act. This bill further provides that medical and dental students, hospital interns and resident physicians, surgeons and dentists and teachers in medical and dental schools who are members of a reserve component of the land and naval forces of the United States may not, if the bill should be enacted, be ordered or called to active duty or into active service in any of such forces, except in time of war, and that any such persons already called into active service who if the pending bill had been enacted would have been exempt from such service shall be discharged on their own request. A further discussion of S. 783 will be found in that part of the Report of the Board of Trustees pertaining to the work of the Bureau of Legal Medicine and Legislation. Hearings were held on this bill on March 18, 19 and 20, 1941, and some proposed amendments were offered. Statements have appeared in the public press indicating that this bill had been tabled indefinitely by the Committee on Military Affairs of the Senate, but information received as this report is in process of preparation is to the effect that an effort will be made to have the bill reported out by the Senate Committee.

H. R. 3571, introduced by Representative McCormack of Massachusetts, pending in the House Committee on Military Affairs, provides that no individual who is licensed to practice medicine under the laws of any state, territory or the District of Columbia shall be ineligible for appointment or for examination for appointment as a medical officer in the active or reserve components of the military or naval forces of the United States solely by reason of any rating or classification of the medical school at which such individual graduated.

H. R. 4184, introduced in the House of Representatives by Mr. Flannery of Pennsylvania, would specifically authorize the President to provide for the deferment from training and service, under such rules as the President may prescribe, of those men engaged in the study of medicine considered to be necessary to the maintenance of the national health in service or industry.

H. R. 4418, introduced by Mr. Faddis of Pennsylvania in the House of Representatives, is identical with a bill originally introduced in the Senate at the previous session of Congress by Senator Murray of Montana.

Various other bills have been submitted to Congress, all of which have some bearing on national defense. Among these is H. R. 3204 providing for an appropriation of $525,000 for the fiscal year ending June 20, 1941 to enable the United States Public Health Service to assist state and local health authorities in health and sanitation activities in areas adjoining military and naval reservations or where there are concentrations of military and naval forces and in areas adjoining government and private industrial plants engaged in defense work. Another bill, H. R. 3570, proposes an appropriation of $150,000,000 to provide additional community facilities made necessary by national defense activities. Under the provisions of this bill, $25,000,000 would be used for the construction of hospitals and $4,200,000 for the construction of clinics. In addition, annual grants of $2,200,000 would be made for hospital care of transient indigents, $2,800,000 for the ambulant care of transient indigents and $1,000,000 for hospital operation.

A bill has been submitted to Congress contemplating the development of plans for school programs of physical education and "instruction and guidance in healthful living and wider recreational use of school facilities and plans for the establishment of school camps."

Various plans for the rehabilitation of the youth of the country and especially of Selective Service Registrants and others who will become eligible for registration have been proposed.

PHYSICIANS FOR SERVICE IN GREAT BRITAIN

Early in April 1941 a request came to the American Medical Association to cooperate with the American Red Cross in an effort to secure physicians up to the number of one thousand who would volunteer for service with the British army and the British emergency medical service. The American Red Cross is officially cooperating in this undertaking with the British Red Cross with the approval of the President of the United States and of official agencies of the federal government.

Through the use of the punch card system as it has so far been developed, the names of physicians who may be eligible for service abroad as indicated have been made available to the American Red Cross, which will communicate directly with these physicians. Information concerning this matter has appeared in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION and has been widely disseminated through radio broadcasting systems.

LIAISON OFFICER

Lieut. Col. Charles G. Hutter, M. C., U. S. Army, has served for several months as liaison officer of the Medical Corps of the Army with the Committee on Medical Preparedness. Colonel Hutter has been most helpful to the Committee and to those in the Association's offices who are concerned with the preparedness program and has won the respect and esteem of all who have been associated with him.

MEDICAL PREPAREDNESS SECTION OF THE JOURNAL

Through the establishment of the Medical Preparedness Section of THE JOURNAL, a mass of material pertaining to many phases of the national defense program has been made generally available. Abstracts of the minutes of meetings of this Committee and a large amount of information concerning official regulations, legislation, activities of state committees and of government services and many other matters have appeared in this section.

CORRESPONDENCE

The correspondence pertaining to the work of the Committee on Medical Preparedness and to the general preparedness program has been tremendous in amount. Effort has been made to reply as promptly as possible to every communication received, though there was a period of eight weeks during which the trial of the case of the United States versus the American Medical Association et al. was in progress when it became impossible to make prompt reply to all communications.

CONCLUSION

Many other matters than those referred to in this report have received official consideration by the Committee on Medical Preparedness. The Committee has earnestly attempted to discharge the duties imposed on it by the House of Delegates and in these efforts has received the most generous assistance from numerous sources, including scientific medical organizations and official committees of those organizations, government officials including the Surgeon Generals of the three major medical services of the government and members of their staffs, and Corps Area Commanders and Corps Area Surgeons.

The Committee desires especially to commend the state chairmen of the Committee on Medical Preparedness for their invaluable service in promoting the national survey of physicians and for the splendid work they have done in connection with other matters. State and county committees on medical preparedness have made fine contributions toward the accomplishment of the medical preparedness program of the American Medical Association. To all of these and to others not specifically mentioned in this report the Committee desires to acknowledge its deep sense of appreciation.

Respectfully submitted.

IRVIN ABELL, Chairman.
STANLEY H. OSBORN.
WALTER G. PHIPPEN.
HARVEY B. STONE.
JAMES E. PAULLIN.
FRED W. RANKIN.
ROY W. FOUTS.
SAM E. THOMPSON.
CHARLES A. DUKES.
JOHN H. O'SHEA.
and ex officio
NATHAN B. VAN ETTEN.
ARTHUR W. BOOTH.
MORRIS FISHBEIN.
OLIN WEST.

Resolution Requesting Establishment of Procurement and Assignment Agency

Dr. Irvin Abell, Chairman, Committee on Medical Preparedness, presented the following resolution, which was referred to the Reference Committee on Executive Session:

WHEREAS, The President of the United States has declared that we are in a state of unlimited national emergency, and the Surgeon General of the United States Army requested the American Medical Association in June 1940 at the annual session to aid in the procurement of the necessary personnel for an army of 1,500,000 men; and

WHEREAS, The American Medical Association established a Committee on Medical Preparedness which has now on hand the records of approximately 150,000 physicians as well as a statement as to their training, experience and specialization; and

WHEREAS, The sudden entrance of the United States into a war might immediately require the services not only of the physicians already called to duty but of a very considerable additional number; and

WHEREAS, Neither the American Medical Association nor any other civilian agency has the responsibility or the authority for the selection of those physicians who would be necessary for immediate duty and who would be called from civilian practice into service with the military agencies; therefore be it

Resolved, That the United States government be urged to plan and arrange immediately for the establishment of a central authority with representatives of the civilian medical profession to be known as the Procurement and Assignment agency for physicians for the Army, Navy, and Public Health Service and for the Civilian and Industrial needs of the nation.

This recommendation is made to avoid or minimize confusion and the inevitable delay which would result from the lack of such an arrangement. It is further recommended by the Committee on Medical Preparedness that, if this resolution is approved by the House of Delegates, a copy of it be sent to the President of the United States, the Secretary of War, the Secretary of the Navy, the Chairman of the Senate and House Committee on Military Affairs, the Administrator of the Federal Security Agency, the Surgeon General of the United States Army, the Surgeon General of the United States Navy, the Surgeon General of the United States Public Health Service, the Adjutant General of the Army and the Health and Medical Committee.

The Training of Physicians Must Be Continued Without Interruption

Dr. Irvin Abell, Chairman, Committee on Medical Preparedness, presented the following statement, which was referred to the Reference Committee on Executive Session:

A Joint Conference of the Committee on Medical Preparedness of the American Medical Association and the Council on Medical Education and Hospitals, held at the Statler Hotel in Cleveland on Monday, June 2, prepared the following statement for transmission to the Secretary of War and to the Surgeon General of the Army:

1. Since the five year preparedness program of the government may require all graduates of approved medical schools annually, in addition to those who may be available from other sources, to enter the service of the Army, Navy and Public Health Service for a year's training, the education of physicians must be continued at the present level and without interruption.

2. The education of physicians is so vital that we urge the War Department to provide for all medical students in approved medical schools and for premedical students accepted for enrolment in approved medical schools some form of military status which will make clear the fact that, in preparing themselves to become physicians for the services of the country, these students are already actually giving an essential service under the preparedness program and are not seeking to evade, escape or defer their responsibilities.

Report of Council on Scientific Assembly

Dr. James E. Paullin, Chairman, presented the following report, which was referred to the Reference Committee on Sections and Section Work:

The Council on Scientific Assembly recommends to the House of Delegates of the American Medical Association that the annual session to be held at Atlantic City in 1942 be made a Pan American meeting and that representatives from all South and Central American countries, Mexico, Cuba, Puerto Rico and Canada be invited to attend and participate in the scientific session program.

Report of Council on Foods and Nutrition Dealing with the National Nutrition Conference for Defense

Dr. James E. Paullin, Section on Practice of Medicine, on behalf of Dr. James S. McLester, Chairman of the Council on Foods and Nutrition, who was not in attendance because of the illness of his mother, presented the following report, which was referred to the Reference Committee on Executive Session:

The National Nutrition Conference for Defense, on the call of the President, was held in Washington during the week of May 26.

Approximately nine hundred persons were in attendance, and of the entire personnel of the conference about 15 per cent were physicians. Nutritionists, social workers, labor representatives, economists, manufacturers of food and others made up the bulk of the membership. In a movement of this kind, leadership should remain in the hands of the medical profession.

The work of the conference was conducted in nine previously selected sections, each of which dealt with a different phase of nutrition. The objectives of the conference as a whole and the general trend of the recommendations merit your entire approval.

The following resolution is submitted for your approval:

Resolved, That the House of Delegates of the American Medical Association expresses its approval of the general objectives of the National Nutrition Conference for Defense called by the President of the United States and specifically endorses the following recommendations:

1. That research in nutrition be encouraged, with an aim primarily toward (*a*) Improvement of presently known chemical and biological procedures for estimating the amounts of the essential nutrients in foods and their physiologic availability; (*b*) more refined technic for the detection of nutritional deficiency states, especially in the subclinical degrees of intensity, and (*c*) more precise determination, for each of the nutrients, of the optimum and minimum requirements of human subjects under varying conditions;

2. That special attention be paid to the diets and nutritional status of all workers in industry and particularly of those most directly concerned with the national defense effort;

3. That, in providing an adequate diet for pregnant and lactating women and for children, the necessity be appreciated for taking into consideration the whole family situation and the limitations of the budget;

4. That closer cooperation between medical and public health groups and other agencies interested in nutrition be established in order that effective local action may be taken;

5. That medical societies, dental societies and health authorities be represented on all state and community nutrition committees and that medical groups take an increasingly active part in organizing, sponsoring and cooperating in nutrition programs;

6. That efforts be made to stimulate greater interest in nutritional problems among general practitioners and, with this in view, that opportunity for postgraduate training in nutrition be made more widely available, and finally, but vastly more important,

7. That schools of medicine give greater thought to the teaching of nutrition.

Respectfully submitted.

JAMES S. MCLESTER, Chairman.

Report of Committee on Legislative Activities

Dr. E. H. Cary, Chairman, presented the following report, which was referred to the Reference Committee on Legislation and Public Relations, with the exception of that portion which relates to the construction of community facilities, which was referred to the Reference Committee on Executive Session:

Mr. Speaker and Members of the House of Delegates:

As the Congress for the last year has given primary consideration to measures dealing with defense problems, it has not been found necessary for the Committee on Legislative Activities to function actively in connection with any particular federal legislation.

The report of the Bureau of Legal Medicine and Legislation to the Board of Trustees and to the House of Delegates has brought to your attention a survey of all the bills which have been introduced that are of sufficient importance for any consideration.

Hospital Construction Bill S. 1230 was reintroduced by Senator Brown, for himself and Senators Wagner and George, embodying all the objectionable features commented on by the House of Delegates at the New York session. It may be worth while to call your attention to the fact that, when the bill was before the Senate in the 76th Congress, it was amended on the floor with the words "The eight appointed members shall be selected from leading medical, osteopathic or scientific

authorities who are outstanding in matters pertaining to hospitals and other public services." The effect of this amendment, if enacted into law, would be that for the first time the government would have its hospital policies partially determined by members of sectarian medicine. It may be said regarding hospital construction bill S. 1230 that it is quiescent. A subcommittee of the Senate Committee on Education and Labor was designated to consider the bill and, while it can be reported that a hearing was in contemplation, it has so far failed to materialize. Your committee has no assurance either way as to whether the subcommittee will act during this session of Congress.

Another bill of importance, H. R. 4476, as introduced, proposed to provide for the employment of interns in the Army Medical Department at not to exceed $720 per annum. The House Committee on Military Affairs amended this bill so as to provide for the employment of osteopaths in the same manner as graduates of reputable medical schools. This bill, as amended, is pending in the House of Representatives.

The House of Delegates may be interested in the Lanham bill, known as H. R. 4545. This bill appropriates $150,000,000 for the construction of community facilities made necessary by national defense activities. Of interest in the matter is the statement from Mr. Charles P. Taft, who told the House Committee on Public Buildings and Grounds that a part of the $150,000,000 would be used for the construction of hospitals and for medical care for transient indigents. The bill was favorably reported to the House and passed on May 9. Your committee feels that legislation of this character may be expected as long as soldiers are being trained and if the disposition of the funds appropriated is wisely accomplished the legislation may be unobjectionable to the medical point of view. However, it is worth while to keep in touch with every government enterprise related to medicine so that the trend and extent of such activities may be known. It may be noted at this point that the enactment of the Lanham bill could minimize the demand for the enactment of the hospital construction bill S. 1230.

Your committee would also like to call your attention to the action taken by the House of Delegates in New York in 1940 regarding the construction of hospitals. The reference committee made an extensive and satisfactory report which was adopted by the House and, while pertinent, would be inappropriate to repeat on this occasion.

Your committee has heretofore made a report on the medical care program of the Farm Security Administration. It has before it the extensive report made by Dr. R. C. Williams, chief medical officer.

Nearly 100,000 low-income farm families, or about 500,000 persons, are banded into small groups to obtain medical care at a cost which they can afford. Starting in a few rural counties five years ago, these medical care plans have now increased in number to 704 different plans covering 832 counties in 33 states. The Farm Security Administration is making small loans ranging from about $100 to $800. A county committee which includes local farmers must vouch for the borrower's character and ability. It is stated that rehabilitation loans have helped more than 800,000 farm families to stay off relief. Guidance in home and farm planning, as important as the credit extended, has gone far toward ensuring the rehabilitation of these families. It is claimed that most loans are being repaid and that the families are becoming self supporting. It is stated that in certain states from 15 to 20 per cent of the complete failures have been ascribed primarily to ill health. In one state a study of 6,337 families revealed sickness as a cause of retarded rehabilitation in 1,119 families, or 17 per cent of the families on the program.

As the Farm Security Administration is developing a health program on behalf of its borrowers which is becoming broader and more effective each year, it is worth while for the medical profession to be reminded of what is being done. Until this time it has been the policy of the Farm Security Administration to sponsor a medical care program in close cooperation with the organized medical profession. Your committee understands that the policy of the Farm Security Administration is to develop no medical care plans in a state until a basic agreement or understanding has been reached with the state medical association. When a mutually satisfactory understanding has been reached, county or district wide plans for borrower families are established in collaboration with the local county or district medical societies. Typically, the funds for participation deposited by each family are placed in a pooled or common fund in the hands of a trustee. An alternative to the trusteeship form of organization is an unincorporated health association organized by the borrowers. Under the arrangement usually followed, annual funds, after deduction of a small amount to cover administrative expenses, are divided into twelve monthly allotments from which bills are paid by the trustee. The bills are paid in full when possible.

Your committee has had called to its attention a new plan proposed in Oregon which involves creation of corporations controlled by laymen clients of the Farm Security Administration whose stockholders receive benefits of medical care.

While the present limitation of participating stockholder to Farm Security Administration clients does not change the present practice so far as medical benefits are concerned, your committee deplores any development called to its attention which would permit later amendment of the by-laws of the corporation to include other than Farm Security Administration clients contrary to the principles of the American Medical Association and the expressed policies of the Farm Security Administration to cooperate fully with state and county societies through unincorporated groups.

It has hitherto been claimed that all medical aspects of a plan are under the control of the county medical society. All bills must be audited and approved by a medical review committee before they are paid by the trustee.

Farm families on the rehabilitation program participate in these plans by prepaying annual dues, which range from about $15 to $35 a family. The rates for a particular plan depend on the services covered, on the average incomes of borrower families in the area and often on the size of the family. For these amounts, which represent the most that families with very low incomes can afford, they are assured of services which ordinarily include family physician's care, obstetric care, emergency surgical care, limited hospitalization and ordinary drugs. Occasionally limited dental care is included in the same program, but there is an increasing tendency to develop separate and more complete dental care plans which are also on a prepayment basis.

The report gives a complete breakdown of the County Medical Care Plan of 13,000 people, where 162 families or 767 persons borrowed $30 per family annually. With this is a breakdown of the services rendered, the amount of the bills and the amount paid. According to the statement the amount collected in this way was not less than 86.6 per cent for the physicians' and surgeons' service, 100 per cent for hospital and drug service, 88.4 per cent for dentistry and 100 per cent for ambulances and administration.

It has come to the attention of your committee that in a recent survey of Farm Security Administration client families a percentage was found of chronic disabilities which constituted a bar to participation in the present plan of prepayment emergency medical care on a basis of equality with other participants. It has been proposed that such families be given correction benefits either by outright grants-in-aid or by a lending repayment basis suited to the individual families' needs. As this has been proposed in one state (Indiana) it may be proposed elsewhere.

Any plan to promote improvement in the collective family health among Farm Security Administration clients should redound to the general benefit. The aid given farm families which improves their economic condition and enables them to liquidate their obligations later has a sound economic basis. If the aforementioned rehabilitation plan is developed, it should receive the approval of the component county medical society and should be accomplished through that society.

Your committee believes that the rehabilitation work done under the supervision of Dr. Williams has been a valuable contribution to society, for the tendency is to restore self respect to a family and to create a more independent outlook justifying the many loans, which in most instances are repaid.

The report deals with the medical aid to migrants. The income of the families that make up this roving group ranges between $200 and $450 a year for a family. These families do not meet the local resident requirements for relief assistance. Since the spring of 1938, medical care has been provided migrants in California and in Arizona through the Agricultural Workers Health and Medical Association, a corporation which the migrants join as members. It is a nonprofit organization subsidized by grants from the Farm Security Administration and directed by representatives of the state health departments and the state medical and dental associations of California and Arizona. Applications for medical treatment are made at the association's district offices or at the camp clinics. A certificate of membership in the association is issued to the applicant, who selects his physician from a list of the physicians participating. The association is billed for the medical or hospital services rendered. Payment is also made for prescribed drugs, roentgenograms and other diagnostic services, emergency care and special diets in cases of malnutrition.

Your committee came into being on account of the many hospitals that were being demanded and built for the veterans of the last World War, and you are familiar with the work which your committee has done in connection with the veterans' hospitals. Your committee has many times made reports based on an understanding which the medical profession had with leaders of the American Legion and the Veterans Administration. A general tendency to appropriate money has been so great that few Congressmen have overlooked the opportunity of securing for their states ample facilities.

During the year 1940, six new facilities were completed and opened, as follows:

Location	Beds	Clinical Type of Patients
Murfreesboro, Tenn.	785	Neuropsychiatric
Amarillo, Texas	156	Medical and surgical
Dallas, Texas	262	Medical and surgical
Fayetteville, N. C.	310	Medical and surgical
Montgomery, Ala.	269	Medical and surgical
Brecksville, Ohio	269	Medical and surgical

During the fiscal year 1941 the military reservation at Fort Howard, near Baltimore, was transferred from the War Department to the Veterans Administration and, after necessary alterations, was opened on March 17, 1941 as a hospital of the Veterans Administration with a limited capacity of fifty beds. It is contemplated to erect during the fiscal year 1942 a new hospital building at Fort Howard, which will increase the capacity there to three hundred and ten beds for patients of the general medical and surgical type. Other than the aforesaid acquisition of Fort Howard, Md., no other new facilities of the Veterans Administration have been or will be opened during 1941, but there is under construction at Marion, Ill., a new hospital which will provide one hundred and sixty beds for general medical and surgical patients. Completion of this project is expected by February 1942.

There has also been appropriated money to cover construction of a hospital in Massachusetts (near Boston) that will provide three hundred beds for general medical and surgical patients. The Veterans Administration also reports that it is further anticipated that funds will be made available in the 1943 appropriations to cover construction of a new facility in Pennsylvania, which will provide four hundred hospital beds and seven hundred and eighty-four beds for domiciled beneficiaries.

As of March 31, 1941 there were ninety-one facilities of the Veterans Administration in operation, and these had a total of 61,683 beds for hospital patients and 18,432 beds for "members" receiving domiciliary care, with incidental medical treatment. When broken down these figures show general medical treatment fifty-eight, neuropsychiatric twenty-nine, tuberculosis (straight) six, tuberculosis (combined) fifteen and tumor clinics five. With these hospitals are established three diagnostic centers and eleven domiciliary homes.

Your committee has pointed out again and again that it had been informed that in time most of these hospitals would likely be converted into domiciliary homes. However, with a vast army being trained and obligations on the part of this government being assumed, it would seem that these hospitals equipped to take care of general medical and surgical cases will be used for that purpose and domiciliary homes will be new hospital ventures more definitely constructed for that purpose.

Your committee realizes that the opposition of the profession to any movement designed to increase hospitals, particularly with respect to the veterans, will be more difficult in the future than it has been in the past.

Your committee concludes this report by appealing to a unified profession to continue its interest in the attitude of its own representatives in Congress so that any sound program can be supported and any program which makes undue inroads into the private practice of medicine can be opposed.

Respectfully submitted.

E. H. CARY, Chairman.
F. S. CROCKETT.
J. H. J. UPHAM.
R. L. SENSENICH.

Report of Reference Committee on Medical Education

Dr. Walter G. Phippen, Chairman, presented the following report, which, on motions duly seconded and carried, was adopted section by section and as a whole:

1. Resolutions on Specialists: Your reference committee considered the resolutions on specialists presented by Dr. Thomas A. McGoldrick, in behalf of the delegates from the Medical Society of the State of New York, heard a discussion of their merits by the proponents and of their criticisms by others, and presents the following resolution:

Resolved, That in order to improve hospital service and the practice of medicine it is recommended that, wherever obtainable, hospitals should have doctors of medicine especially trained in pathology, radiology, anesthesiology and physical medicine as directors in charge of these respective departments and that the directors of these departments shall be eligible for membership in their respective medical staffs or medical boards with voice and vote.

2. Report of Council on Medical Education and Hospitals: Your reference committee desires to commend the Council on Medical Education and Hospitals for its comprehensive and efficient report. It approves the recommendation of the Council that the House of Delegates use all means in its power to bring to the attention of those in authority the disastrous consequences of any interruption or even impairment of the present program for the education of physicians.

Your reference committee notes the comment on the multiplicity of surveys of hospitals and feels that attention should be directed to this situation in order that unnecessary surveys may be eliminated and more coordination may be used in hospital data previously gathered.

Your reference committee wishes to commend Dr. Reginald Fitz for the splendid study and report on the health of interns throughout the country. Your reference committee feels that the report is most timely and trusts that it will lead to the lessening of morbidity among interns.

3. Tribute to Dr. Fred Moore: Your reference committee recommends the adoption of the tribute to Dr. Fred Moore as presented in the supplementary report of the Council on Medical Education and Hospitals and recommends that a copy of this tribute be sent to Mrs. Moore and to the Iowa State Medical Society.

Respectfully submitted.

WALTER G. PHIPPEN, Chairman.
ELBRIDGE J. BEST.
CARL R. STEINKE.
LOUIS A. BUIE.
WINGATE M. JOHNSON.

Report of Reference Committee on Legislation and Public Relations

Dr. Henry A. Luce, Chairman, presented the following report, which was adopted section by section and as a whole on motions duly seconded and carried:

1. Resolutions Requesting Appointment of Committee to Confer with Committees of Hospital Associations: (*a*) The portion of the resolutions presented to the House of Delegates by Dr. Harry H. Wilson in behalf of the California Medical Association requesting that the House of Delegates instruct the Board of Trustees of the American Medical Association to confer with similar committees representing the American

Hospital Association and the Protestant and Catholic hospital associations of the United States, the conjoint committees to study and submit reports to their respective national bodies, in which would be outlined platforms or principles designed to clarify the relation of medical services that may be offered in prepayment hospitalization and similar plans, the same to be in line with the basic principles laid down in the past by the House of Delegates and other authorities of the American Medical Association, was approved by your reference committee, which recommends its adoption.

(*b*) The second portion of these resolutions, requesting the Board of Trustees to proceed to these matters as expeditiously as may be possible, and to submit the committee's report, with such suggestions and/or recommendation that the Board of Trustees may wish to attach thereto, at the next annual session of the American Medical Association, the Board of Trustees to be authorized in the interim to advise the constituent state associations of the American Medical Association concerning tentative or other agreements that may have been reached, is emphatically approved by your reference committee at this time because the subject matter of this resolution was presented both at the St. Louis and at the New York session but finds that the extra work thrown on the administrative offices of our organization by court procedures and by the medical preparedness program has made it well nigh impossible to make a careful study and report covering the subject matter involved in this resolution.

2. Medical Service Plans: Your reference committee further recommends that the specialty societies, such as radiologists, pathologists and anesthesiologists, recommend to their members that they defer entering into contractual relationships with hospitals involved in medical service plans until the relationship has been thoroughly clarified as requested in the resolutions from the California Medical Association.

Respectfully submitted.

HENRY A. LUCE, Chairman.
F. J. PINKERTON.
JOHN H. FITZGIBBON.
TERRY M. TOWNSEND.
F. S. CROCKETT.

Report of Reference Committee on Amendments to the Constitution and By-Laws

Dr. William Weston, Chairman, presented the following report, which was adopted on motion of Dr. Weston, seconded by Dr. Arthur T. McCormack, Kentucky, and carried:

Your reference committee approves of the amendment to the By-Laws, chapter XV, section 1, item 7, to change the name of the Section on Pharmacology and Therapeutics to the Section on Experimental Medicine and Therapeutics.

Respectfully submitted.

WILLIAM WESTON, Chairman.
EDMUND R. BRUSH.
EDWARD M. PALLETTE.
J. N. BAKER.
WALTER W. KING.

On motion of Dr. Arthur T. McCormack, Kentucky, seconded by Dr. George W. Kosmak, New York, and carried, chapter XV, section 1, item 7 was amended to read "7. Experimental Medicine and Therapeutics."

Report of the Reference Committee on Reports of Board of Trustees and Secretary

Dr. Francis F. Borzell, Chairman, presented the following report, which on motions duly seconded and carried was adopted section by section and as a whole:

REPORT OF THE SECRETARY

Your reference committee has reviewed the report of the Secretary. It is pleased to emphasize the report of continued growth in our membership. Gratifying as this progress is, examination, however, of the tabulation made by states indicates fertile fields for cultivation that should be tilled.

The report of the Secretary on Fellowship enrolments shows also a wholesome increase in the number of Fellows, but here too we would wish to see an accelerated growth.

Your reference committee notes with appreciation the greatly augmented field work carried on by the officers, both elective and administrative, over the past year.

Your reference committee feels that the Secretary's modest report presents but inadequately the true story of the faithful stewardship of Dr. West. With the ever increasing demands on the Secretary in time and energy, the committee expresses the wish that all consideration be given to the possible necessity for providing him with added assistance.

Your reference committee urges the House of Delegates to take heed to its own prior action that memoirs and resolutions be forwarded to the Secretary, wherever possible, thirty or sixty days before the annual session.

REPORT OF THE BOARD OF TRUSTEES

1. Your reference committee concurs with the Board of Trustees in the expression of grief at the loss by death of one of their faithful members, Dr. Austin A. Hayden, and of Dr. Paul Nicholas Leech, the Director of the Division of Drugs, Foods and Physical Therapy, Secretary of the Council on Pharmacy and Chemistry and Director of the Chemical Laboratory.

Income and Expenditures: Your reference committee notes with satisfaction the healthy state of the finances of our Association. The details are published and need no elucidation. They indicate most efficient and judicious administration by the Board of Trustees.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION: Your reference committee is pleased to note the continued success of THE JOURNAL both as the universally recognized leader in its field and as to the increase in circulation. Here also our editorial and business personnel are to be commended for their efficiency. Your committee would emphasize the added significance of this growth in the light of experiences in war-torn foreign countries.

Press Relations: Your reference committee respectfully recommends careful reading of this section of the Report of the Board of Trustees. Because of the far reaching influence of friendly press relations and because of occasional unwarranted criticisms by the uninformed, your reference committee recommends the widespread publication of this part of the report in county and state society journals. Your reference committee recognizes the invaluable services of the Editor in establishing these favorable press relations. One striking example is the prompt radio and press publicity in reference to contaminated sulfathiazole.

2. Special Journals: Your reference committee is pleased to note the growth in circulation of the special journals. It also commends the valuable addition of the new publication WAR MEDICINE.

Library: While the activities of the package library service show some increase, your reference committee would recommend more widespread use of these reference facilities than at present.

HYGEIA: Your reference committee notes with satisfaction the increasing popularity of HYGEIA, particularly as a reference publication for health and education. It urges increased local activities looking toward wider distribution of this publication.

Council on Pharmacy and Chemistry: The report of the activities of the Council on Pharmacy and Chemistry emphasizes anew the importance of this department. Investigation by the Council of the newer chemotherapeutic agents, vitamins and hormones are proving invaluable to the profession and to the United States Food and Drug Administration. Your reference committee commends the Council for its continued successful functioning.

Council on Foods and Nutrition: The report of the Council on Foods and Nutrition indicates timely attention to the problems of nutrition, emphasized by the needs of national defense. Your reference committee respectfully recommends that this council be urged to keep in closest touch with federal movements in the field of nutrition to insure intelligent medical direction of public programs.

3. Council on Physical Therapy: Your reference committee, while commending the Council for its continued valuable ser-

vices, calls especial attention to the importance of the studies on roentgen ray problems and urges widespread publicity of the article on "X-Ray Protection" published in THE JOURNAL. Reprints should be widely distributed to hospitals and roentgenologists.

Council on Industrial Health: The report of this council is recommended by your reference committee for full approval. Your reference committee considered carefully the importance of the relations of this council to national defense as indicated in its report. It urges careful study of the report by the members of this House that they in turn may institute the necessary cooperative activities in their respective state organizations. Your reference committee commends the Council for its forehanded liaison with federal agencies and recognizes the importance of joint functioning of committees on industrial health in state medical associations with bureaus of industrial hygiene and workmen's compensation commissions in the state governments.

Committee on Scientific Research: The report of the Committee on Scientific Research calls for no special comment from your reference committee. It did note, however, a rather large number of completed grants the results of which are still "to be published." Doubtless more detailed explanation might elucidate.

4. Bureau of Medical Economics: The report of the Bureau of Medical Economics is divided into four headings, the first three of which deal strictly with medical economics while the fourth is a report of its activities for the Committee on Medical Preparedness. Each division is of sufficient importance to call for separate attention by this reference committee.

(*a*) Prepayment Plans for Medical Care: This is a report of trends and tendencies to date in this field. The bureau has made certain deductions which call for serious consideration by the members of this House. It emphasizes the trends toward increasing utilization of tax funds in the provision of medical care. Certain observations are then made which, in the opinion of your reference committee, are of sufficient importance to warrant their emphasis by way of specific approval.

Your committee seriously considered the added tasks incident to the work assigned to the bureau by the medical preparedness census, particularly in the light of possible curtailment or arrest of further necessary study of the ever increasing numbers of prepayment medical service plans. It is recommended that the Board of Trustees take whatever steps are necessary to insure the continuity of this important phase of the work of this bureau to the end that there may be established some method of coordination and interchange of material pertinent to the administration of such plans in order that all state and county medical societies may profit thereby.

Your reference committee further recommends that the House of Delegates reaffirm its belief that the principle of prepaid medical care justifies an experimental period during which time advice and assistance be given to medical societies that elect to conduct such experiments under medical sponsorship. It therefore recommends special consideration and approval by the House of this portion of the report.

(*b*) Survey of Medical Services: Under the heading of Survey of Medical Services and Facilities for the Care of Crippled Children is a report of certain activities of the bureau which apparently resulted in information of value to many. Your reference committee notes the absence of any reference to proposed publication of the conclusions of this survey.

(*c*) Group Medical Practice: Group Medical Practice is considered under another heading. The conclusions in the report deserve detailed consideration by the members of this House. Your reference committee recommends that studies of group medical practice be continued with a view toward further clarification.

Another division of the report of the bureau deals with a report on a survey of physicians for the Committee on Medical Preparedness as a part of our efforts to assist the Surgeon Generals of the Army, Navy and Public Health Service. Your reference committee is impressed with the size of this task undertaken by the bureau and gratified with the efficiency of its accomplishment.

5. Bureau of Health Education: Your reference committee recommends approval of the report of the Bureau of Health Education. This report epitomizes a year of intense activity of the kind to bring credit on the American Medical Association and the American physician.

The public relations value of this bureau is second only to its value as an authoritative health educational agency. Its policy of cooperative assistance and advisory guidance of governmental and lay organizations interested in health education calls for wholehearted approval by this House and your reference committee so recommends.

6. Bureau of Legal Medicine and Legislation: Without attempting a detailed consideration your reference committee notes with approval the evidence of vigilant scrutiny of proposed legislation affecting medicine and health obvious in the report of this bureau, which deserves detailed consideration by the members of this House.

It is noted that twenty-five states have now adopted legal measures to control the dispensing of barbiturates only in medical prescriptions. Your reference committee recommends to the House of Delegates that efforts be put forth to stimulate the remaining states to adopt similar legislation.

7. Supplementary Report of the Board of Trustees: Your reference committee recommends that the Board of Trustees be asked to establish a Commission on Pan American Relations to advise on the various problems of Pan American import.

Your reference committee is impressed with the multifarious responsibilities of the Board of Trustees and the bureaus functioning under its direction. Especial commendation is extended to the executive directors of these bureaus. To them belongs the credit for their efficient operation.

Respectfully submitted.

FRANCIS F. BORZELL, Chairman.
F. J. SAVAGE.
ROBERT A. PEERS.
MEREDITH MALLORY.
WILLIAM R. BROOKSHER.

Report of Reference Committee on Miscellaneous Business

Dr. Charles G. Strickland, Chairman, presented a report which as amended reads as follows:

1. Resolution Requesting Appointment of a Committee to Survey the Relationship of Medicine and Law: There appeared before your reference committee as proponents of this resolution Professor Moritz, newly appointed professor of legal medicine at Harvard, and Drs. Dwight O'Hara and Charles E. Mongan, Massachusetts. These gentlemen stated that as early as 1931 a committee had been appointed by the House of Delegates of the American Medical Association to work with the Bureau of Legal Medicine and Legislation to formulate a solution of the problem with which this resolution deals and that this committee apparently fell by the wayside.

Your reference committee recognizes the merit of the position taken by the resolution and strongly sympathizes with its intent. However, owing to widely differing conditions, both geographic and political, existing in the forty-eight states, the length of time necessarily required and the possible expense involved to accomplish its purpose, your reference committee recommends that, instead of passing this resolution as introduced, the House of Delegates refer it to the Board of Trustees and request sympathetic study of the problem involved.

2. Resolution Requesting Appointment of a Committee to Study the Question of Determination of Serum Sensitivity: The possibilities opened up by this resolution were discussed by your reference committee at length. The plan suggested has merit and deserves further study. Other conditions than serum sensitivity, as, for instance, diabetes and epilepsy occurring in persons admitted to hospitals in coma and without history, would be similarly helped and the patient protected if a standard tattoo code covering all these ailments could be devised. It would be, however, a long time before such a tattoo code could come into general use because of reasons which will readily occur to you. Your reference committee therefore recommends that, instead of accepting or rejecting this resolution, the House of Delegates

refer it to the Council on Scientific Assembly for study and such action as your Board of Trustees may order.

3. Resolution Requesting Appointment of a Committee to Confer with Specialty Boards: Your reference committee feels it inadvisable to set up a special committee for the purpose designated. Some inequalities on distribution of medical care undoubtedly exist. It recommends that the Michigan State Medical Society's resolution be referred to the Board of Trustees for its information and such action as it may care to take.

Respectfully submitted.

CHARLES G. STRICKLAND, Chairman.
FREDERIC E. SONDERN.
HOLMAN TAYLOR.
CHARLES E. KIELY.
ANDREW F. MCBRIDE.

It was moved by Dr. Strickland, seconded by Dr. Frederic E. Sondern, New York, and carried after discussion by the Secretary, that the first section of the report of the reference committee, referring to the Board of Trustees the resolution regarding a survey of the relationship of medicine and law, be adopted.

It was moved by Dr. Strickland that the second section of the report of the reference committee, referring to the Bureau of Health Education the resolution dealing with the determination of serum sensitivity, be adopted, and the motion was seconded by Dr. Arthur T. McCormack, Kentucky. The suggestion was offered that the matter be referred to the Council on Scientific Assembly and Dr. Strickland accepted this suggestion, following which this section of the report of the reference committee was adopted, as amended, after discussion.

Dr. Strickland moved that the third section of the report of the reference committee, referring to the subject of specialty boards, be adopted, and the motion was seconded by Dr. J. Newton Hunsberger, Pennsylvania, and adopted after discussion by a number of delegates.

On motion of Dr. Henry A. Luce, Michigan, seconded by several, and carried, a resolution dealing with hospital privileges for general practitioners, which had been before the House, was rereferred to the reference committee.

On motion of Dr. Strickland, seconded by Dr. John Z. Brown, Utah, and carried, the report of the reference committee as amended was adopted as a whole.

Report of Reference Committee on Sections and Section Work

Dr. George W. Kosmak, Chairman, presented the following report, which was adopted section by section and as a whole on motions of Dr. Kosmak, duly seconded and carried:

Your Reference Committee on Sections and Section Work has given careful consideration to the Report of the Council on Scientific Assembly as well as to the resolution introduced by Dr. Henry A. Luce, Michigan.

1. Report of Council on Scientific Assembly: The recommendation dealing with the change of name of the Section on Pharmacology and Therapeutics to "Section on Experimental Medicine and Therapeutics" is approved by your reference committee and submitted for action by the House.

Commendation and approval of the scientific program developed for this session by the Council is hereby extended.

2. Resolution Requesting the Creation of a Section on General Practice: Careful consideration was given to the question of establishing a new "section for the general practitioner." This was felt by the Council on Scientific Assembly to be undesirable. Your reference committee discussed the matter in connection with the resolution presented by Dr. Luce and submits to this House its belief that an experimental "session" in the Section on Miscellaneous Topics be established for the purpose of testing out the plan at the next session of the Association. If successful in point of attendance and interest, the question of establishing a permanent section can then be given further consideration.

Your reference committee feels that the general practitioner constitutes such an important and numerous factor in the membership of this Association that his requests should be given due consideration.

If the House reacts favorably to our suggestion, the officers appointed to conduct the "session" must be selected with a view to presenting a program that will meet the requirements of the situation.

3. Request of Council on Scientific Assembly that Atlantic City Session in 1942 Be Made a Pan American Session: Your reference committee desires to commend the proposition in the supplementary report of the Council on Scientific Assembly and fully approves of the recommendation contained therein that the annual session to be held in Atlantic City in 1942 be developed as a Pan American gathering and that representatives from all South and Central American countries, Mexico, Cuba, Puerto Rico and Canada be invited to attend and participate in the program of the Scientific Assembly.

Respectfully submitted.

GEORGE W. KOSMAK, Chairman.
HILTON S. READ.
ROLLO K. PACKARD.
DAVID D. SCANNELL.

Report of Reference Committee on Rules and Order of Business

Dr. Thomas F. Thornton, Chairman, presented the following report and moved its adoption:

Your reference committee recommends that at the close of this meeting the House recess to convene in regular executive session at 2 o'clock this afternoon.

Respectfully submitted.

T. F. THORNTON, Chairman.
FLOYD S. WINSLOW.
JAMES Q. GRAVES.
JOSEPH F. SMITH.
E. N. ROBERTS.

Dr. R. W. Fouts, Nebraska, moved as a substitute that the House convene in regular session at 2 p. m. and meet in executive session at any time it desires after that, and the motion was seconded by Dr. Thomas A. McGoldrick, New York, and carried.

The report of the reference committee was then adopted as amended.

Report of Reference Committee on Reports of Officers

Dr. C. W. Roberts, Chairman, presented the following report, which was adopted section by section and as a whole on motions of Dr. Roberts duly seconded and carried:

1. Address of Speaker: Your reference committee desires to commend the Speaker for his zeal, both in spirit and in the performance, which has made possible the accomplishment of his hope that the actions of this House would reflect an atmosphere in which deliberate judgment and unregimented conclusions regarding the various matters brought before it would prevail. It knows that the past pronouncements of the House have issued from strict parliamentary procedure notwithstanding allegations in certain quarters to the contrary. Your reference committee joins the Speaker in support of his purpose to preserve a practice which has made of this House a model for deliberative bodies seeking to exemplify democratic processes in government.

The Speaker posed a question to the House. "Whom do you represent? What interest or interests do you espouse?" Gallantly the answer was frankly forthcoming in his own words, which your reference committee paraphrases. It is a profession based on ideals which you truly represent. In a world where so-called realism is offered as a panacea for all our ills and expediency adjudged decent as a camouflage for questionable political manipulations, it has become a little old fashioned to confess in intellectual circles to a reverence for idealism. Notwithstanding, your reference committee desires to commend the Speaker for his emphasis of the fact that medicine rests today as it has in the past on the cornerstone announced in the opening sentences of the Principles of Medical Ethics. A profession has for its primary object the service it can render to humanity; reward or financial gain should be a subordinate consideration. This has been a basic principle of medical ethics since the time of Hippocrates. If more than lip service to this

principle is to be given, the Speaker catalogues a few familiar qualities which must continue to characterize our membership: integrity, courage, wisdom, tolerance, ability, vision. He intimates that if medicine falls from its high estate as a profession to that of a trade it will not be by judicial decree but through a neglect of the eternal values that have made our profession one for which we are proud to live and in which we are content to die. Together with its thanks to the Speaker, your reference committee asks for a rededication of our profession to these moving sentiments in the sure knowledge that we may thus justify the confidence which a grateful public has lavished on us.

2. Address of the President: Dr. Van Etten touched pointedly on a number of matters of great interest to our entire profession. Your reference committee would emphasize his insistence on the value of postgraduate education and the necessity of the physician of today relating his thinking to our changing social picture. Your reference committee wishes here to express its appreciation for his many contributions to the study of the complex problems that have faced the medical profession during the past decade. When the final story is written, his name will stand high among those wise councilors who have guided us during this troubled time. Your reference committee joins him in reaffirming the recommendation of this Association that a national department of health be created under a director of cabinet rank to coordinate and direct all the various health activities of the government not concerned with the care of the armed forces.

He has drawn a clear distinction between the functions of a public health service concerned with the prevention of disease and that of the practitioner of medicine who is skilled in the treatment of disease in the individual. Your reference committee commends for your consideration his cogent and forceful defense of organized medicine and especially his evaluation of the services rendered by our Board of Trustees and our executive officers. With him your reference committee feels a justifiable pride in the response made by the members of our Association to the call of our government and it affirms its willingness and purpose to devote to the service of our country every resource of our organization.

It has been said that, when the nightingale sings, all the other birds of the forest withhold their notes lest they distort the harmony of the nightingale's song. No words in eulogy of the President's address are needed. The message speaks eloquently for itself. Neither by mere words can your reference committee add any whit to his stature or by neglect detract from your recollection of his outstanding contribution to medicine during his period of office. He is superb in leadership, persuasive in voice, sincere without affectation, tolerant of those who hold honest differences, constructive, advocate and author of safe principles for the guidance of the profession and the establishment of equitable procedures for the distribution of medical care to the underprivileged and unfailing proponent of the best in medicine for a profession which he regards as the best on earth. These qualities, to recite only a few, have endeared him to our membership. While words are inadequate to express its thanks, your reference committee desires to record here in your name an expression of highest appreciation for a service superbly performed. The passing year will reveal an ever increasing fold of benefits flowing from his sacrificial services in behalf of American medicine. As he returns to the stethoscope our love goes with him.

3. Address of the President-Elect: Your reference committee is in ready agreement with the President-Elect's commendation of the officers of the American Medical Association for the efficiency exhibited in the management of an institution whose interests are of necessity so broad and so variable. It is recognized that it is through the devoted activities of the full time employees of the Association but no less through the sacrificial services of the officers, councils and committees of the Association working with no thought of monetary reward that the President-Elect is able to voice this just appraisal of the Association's business and scientific management.

Your reference committee notes the concern of the President-Elect for the physical welfare of the Association's officers, especially that of the occupant of the Presidency. It is in sympathy with the humane motive that prompted this observation. All agree that the duties imposed on the President-Elect and the headquarters' officers, but particularly the President, are arduous, exacting and calculated to make serious demands on health reserve. It is undoubtedly true that, through a recognition of these dangers and the exercise of a more discriminating judgment, calls on the President for official visits to constituent societies could be lessened. Your reference committee is convinced, however, that the spoken word has come to occupy a position of increasing importance in the promulgation of the Association's policies among the members and in the discharge of its civic obligation to the public. The very fact that there is increasing demand by constituent associations for personal visits from the Association's officers is of itself proof of the indispensable nature of the activity. Recognizing that the President-Elect had no thought of suggesting any crippling curtailment of this activity but simply felt impelled, as he says, from observation of the effect of these duties on the health welfare of the occupants of the Presidency to draw attention to its gravity in the hope that wider efforts would be made to minimize the calls made on him, your reference committee draws your attention to this observation confident that it meets your approbation and will have your support. Your reference committee would reemphasize, however, its conviction that judicious use of the headquarters officers and of the President and President-Elect is essential to continued growth of the influence of the Association in professional and public relationships. It believes that the Board of Trustees and the General Manager of the Association can be relied on to weigh this matter and set it in its proper relation, giving due consideration to the interests of both the Association and its officers. Your reference committee therefore suggests that the matter be left in the capable hands of the Board of Trustees for wise consideration.

The President-Elect suggests the advisability of keeping young men coming into the House of Delegates and their placement on important committees in order that through experience they may be prepared to fill vacancies as the older men become inactive. This idea is worthy of support, and your reference committee commends it to your serious consideration. Perhaps it would be wise if constituent associations in the election of alternate delegates would select them from the younger members of their organizations and consider sending them to the annual session of the House of Delegates as observers. Surely they would profit from such nonofficial contacts with the activities of the annual sessions.

Your reference committee desires particularly to record its agreement with the President-Elect's reference to the necessity of subordinating all trivialities and conflicts of opinion to the pressing need of national unity and national preparedness. As the President-Elect has stated, suits, privileges, personalities, personal opinions in the light of the world conflict would best be relegated to a secondary position. In this sentiment your reference committee is in ready agreement and commends it to your thoughtful consideration. The medical profession yielding none of its prerogatives will nevertheless continue to give in this emergency, as it has in past similar crises in our country, its unswerving loyalty to the nation's welfare.

4. Report of Judicial Council: (*a*) In the report of the Judicial Council attention is called to the lack of uniformity among the several states as to the requirements for membership. While there is no disposition on the part of your reference committee to lay down any rigid requirements as to membership in the various state associations, it is felt that in the interest of families a certain uniformity should be observed since representation in this body is based on the number of physicians recorded as members of the state associations. Your reference committee therefore recommends that the Judicial Council, as a guide to the state associations, draw up recommendations as to the proper basis of membership and define the status of the various classes of members in such associations, and it further recommends that representation in this body be based on the number of active members in each society.

(*b*) Your reference committee concurs in the opinion of the Judicial Council that controversial matters that may arise in any local society should be reviewed by the grievance committee

of the local society concerned and then by the properly constituted state agency before being referred to the Judicial Council.

(*c*) Your reference committee concurs in the opinion of the Judicial Council that it would be unwise to grant to any of the specialist groups the right to display special insignia in any form.

(*d*) Careful consideration has been given by the Judicial Council to the question of representation in this body. At present the total membership of the House is limited to one hundred and seventy-five, divided as follows: one member from each state and territory for each nine hundred and thirty members or fraction thereof, one representative from each of the several sections of the Scientific Assembly, and one representative each from the medical department of the Army, from the medical department of the Navy and from the Public Health Service. With the gradual increase in the number of sections, there has been a corresponding decrease in the proportionate representation of the several states. Furthermore, since the members of the sections are members of their respective constituent state associations, they now have double representation. Your reference committee suggests that the interests of the sections might still be well conserved if they were given a nonvoting status and that a more equitable representation would be effected if state representation was based on a certain fixed number of members or major fraction thereof. At present the proportionate representation of certain of the sections based on their registered attendance is several times as great as that allowed the state societies. Your reference committee feels that all the branches of the government services should be continued on their present basis since their delegates speak in behalf of physicians not otherwise represented. An alternative to this suggested change in the constitution of the House would be through revision of the By-Law which at present limits voting membership to one hundred and seventy-five.

Your reference committee therefore recommends that the Judicial Council consider carefully this whole matter of representation in the House of Delegates with the purpose of devising a fair and equitable basis of representation.

Respectfully submitted.

C. W. ROBERTS, Chairman.
H. G. HAMER.
L. G. CHRISTIAN.
A. R. MCCOMAS.
WALTER B. MARTIN.

NEW BUSINESS

Resolution on Serologic Tests for Syphilis

Dr. Walter B. Martin, Virginia, presented the following resolution, which was referred to the Reference Committee on Miscellaneous Business:

WHEREAS, A number of state laws have been enacted which, under certain conditions, make serologic tests for syphilis compulsory; and

WHEREAS, Standardization of laboratories performing serologic tests under the terms of these laws has become necessary and is being carried out; and

WHEREAS, For biologic and technical reasons there are a considerable number of false positives reported from standardized laboratories; and

WHEREAS, The reporting of false positives may work a grave injustice to certain individuals and result in great suffering; therefore be it

Resolved, That the Board of Trustees of the American Medical Association through an appropriate bureau or committee investigate the problem with special reference to (1) the advisability of such laws, (2) safeguarding the public as far as possible against such false positives and (3) the relative emphasis to be laid on the specificity and sensitivity in establishing criteria for standardization of laboratories under these laws.

Resolution on Establishment of Central Institute for Research in Nervous and Mental Diseases in the United States Public Health Service

Dr. H. A. Luce, Michigan, presented the following resolution, which was referred to the Reference Committee on Miscellaneous Business:

WHEREAS, Mental and nervous diseases, including epilepsy, constitute one of the largest, if not the largest, unsolved problems in medicine; and

WHEREAS, There are now on the books of institutions caring for mental diseases and deficiency more than six hundred thousand patients and the states and the federal government spend upward of $200,000,000 a year for the care and treatment of these patients; and

WHEREAS, Less than 0.5 per cent of this amount is spent for research in these diseases by the states and the federal government; and

WHEREAS, Research into mental and nervous diseases and epilepsy offers possibilities for decreasing the suffering and expense due to these diseases; and

WHEREAS, Research into nervous and mental diseases and epilepsy has been relatively neglected owing to lack of financial support; therefore be it

Resolved, That the House of Delegates of the American Medical Association approves the principles of the plan that has been advanced to establish in the Public Health Service a central institute to carry on clinical and laboratory research in nervous and mental diseases, and to extend financial aid to outside institutions and agencies to carry on research projects approved by a national council set up to act in an advisory capacity to the institute.

Resolution on Certification in Recognition of Special Qualifications for General Practice

Dr. George R. Dillinger, Indiana, presented the following resolution, which was referred to the Reference Committee on Miscellaneous Business:

WHEREAS, There are in existence qualifying boards for the certification of physicians practicing the various specialties; and

WHEREAS, There is no present available method for the qualification and certification of physicians in general practice; therefore be it

Resolved, That the House of Delegates of the American Medical Association authorize the Board of Trustees through its councils or any other agency to give study to the matter of developing standards and means by which certification may be given in recognition of special training, experience and fitness, and special qualifications for general practice.

Resolution on Appeal of British Red Cross for American Physicians

Dr. Thomas A. McGoldrick, New York, presented the following resolution, which was referred to the Reference Committee on Military Preparedness:

WHEREAS, The President of the United States on April 17, 1941 has, as president of the American Red Cross, endorsed the appeal of the British Red Cross for one thousand young American physicians; and

WHEREAS, The American Medical Association, in an editorial in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, has assured Britain of every possible assistance and has supplied the Red Cross with lists of eligible young doctors, thereby endorsing the principle that American physicians be encouraged to volunteer for foreign service; and

WHEREAS, Of the five thousand annual graduates of American medical schools only three thousand, or 60 per cent, are physically acceptable for military service and available to meet the demands of an expanding military establishment, thereby necessitating substantial requisitions from the ranks of those now in private practice in addition to depriving the civil population of 60 per cent of the new graduates; and

WHEREAS, The maintenance of those standards of military and civil health made possible by the thorough education and training of the American physician and now demanded by the people of the United States is vital to the defense of the nation and the welfare of its population; and

WHEREAS, The Medical Society of the State of New York, with these facts in mind, has instructed its delegates to propose that the American Medical Association state its policy with respect to diminution of the reservoir of requisitions of volunteer medical personnel emanating from a foreign source; therefore be it

Resolved, That the House of Delegates instruct the Board of Trustees of the American Medical Association, after appropriate study, to formulate and express through THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION a guiding policy in this matter.

On motion of Dr. John Z. Brown, Utah, seconded and carried, the House recessed at 12:45 p. m.

Tuesday Afternoon, June 3

The House of Delegates was called to order by the Speaker at 2:10 p. m.

The Speaker announced that Dr. Holman Taylor, Texas, had been requested to serve as sergeant-at-arms in place of Dr. A. A. Ross, Texas, who was not in attendance.

On motions, duly made, seconded and carried, attendance at the Executive Session was granted to members of the House of Delegates; officers, trustees and persons allied to the administrative affairs of the American Medical Association; presidents, secretaries, executive secretaries and chairmen of councils of constituent state and territorial medical associations; secretaries and executive secretaries of component county medical societies; the liaison officer, Lieut. Col. Charles G. Hutter; the attorney for the American Medical Association; the secretary of the Canadian Medical Association, and the secretary of the Southern Medical Association.

Executive Session—Tuesday Afternoon, June 3

The Sergeants-at-Arms polled the House, after which the House went into Executive Session at 2:20 p. m., with Dr. H. H. Shoulders, Speaker, presiding.

Report of Board of Trustees

Dr. Arthur W. Booth, Chairman, presented the following report of the Board of Trustees, which was referred to the Reference Committee on Executive Session:

INDICTMENT AND TRIAL
OF THE
AMERICAN MEDICAL ASSOCIATION, THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA, HARRIS COUNTY (TEXAS) MEDICAL SOCIETY, WASHINGTON (D. C.) ACADEMY OF SURGERY AND TWENTY-ONE INDIVIDUAL DOCTORS, ALLEGED TO BE MEMBERS AND OFFICERS OF THE AFORESAID MEDICAL ASSOCIATION AND SOCIETIES, IN THE CASE ENTITLED UNITED STATES OF AMERICA VERSUS AMERICAN MEDICAL ASSOCIATION ET AL., DISTRICT COURT OF THE UNITED STATES FOR THE DISTRICT OF COLUMBIA, NUMBER 63221

On Dec. 20, 1938 there was filed in the office of the Clerk of the District Court of the United States for the District of Columbia at Washington, D. C., an indictment by an additional grand jury of the District of Columbia, charging the defendants mentioned in the caption hereof with combining and conspiring together for the purpose of restraining trade in the District of Columbia, in violation of section 3 of the act of Congress of July 2, 1890, known as the Sherman Antitrust Act.

On March 29, 1939 the defendants filed a demurrer to the indictment. The effect of the filing of a demurrer to an indictment is to say that, admitting everything stated in said indictment to be true, no violation of law has been charged.

Written briefs and arguments in support of the demurrer were filed by the defendants, and oral argument thereon was had before the court on various dates. On July 26, 1939 the District Court sustained the defendants' demurrer to the indictment and dismissed the indictment. The District Court filed a written opinion and gave as its principal reason for holding that the indictment did not charge a violation of section 3 of the Sherman Antitrust Law that the practice of medicine was not a trade.

The United States appealed the decision of the District Court to the Court of Appeals of the District of Columbia. While the case was pending in the Court of Appeals of the District of Columbia the United States filed a petition in the Supreme Court of the United States requesting that court to remove the case from the Court of Appeals of the District of Columbia to the United States Supreme Court for decision. The Supreme Court of the United States refused to order the case removed.

Thereafter printed briefs and arguments were filed by both sides in the Court of Appeals of the District of Columbia and in due course oral argument was had before the Court of Appeals. On March 4, 1940 the Court of Appeals filed its decision and written opinion reversing the order of the District Court and ordering that the case be remanded to the District Court for trial. The Court of Appeals in its opinion said that the practice of medicine was a trade.

The defendants filed a petition for certiorari in the Supreme Court of the United States requesting that court to review the decision of the Court of Appeals. The United States in its reply to defendants' petition requested the Supreme Court of the United States not to review the decision of the Court of Appeals at that time on the demurrer but to require the defendants to stand trial and thereafter when all the evidence was in the record to review it if it saw fit to do so. The Supreme Court denied the defendants' petition for certiorari, without an opinion, and as a result the defendants were required to go to trial in the District Court of the United States at Washington, D. C.

On Feb. 5, 1941 the trial began before a jury in the District Court. The trial continued each day until April 4, 1941, when it was concluded. At the conclusion of the evidence for the United States the court directed the jury to return a verdict of not guilty as to Harris County Medical Society, Washington Academy of Surgery, Dr. Leon Alphonse Martel and Dr. Joseph Rogers Young. At the conclusion of all the evidence the defendants requested the court to direct the jury to find the defendants "not guilty," but the court denied the request and, after instructing the jury as to the law of the case, submitted the case to the jury. The jury found the American Medical Association and the Medical Society of the District of Columbia guilty as charged in the indictment; that is, guilty of combining and conspiring to restrain trade in the District of Columbia. The jury acquitted all of the remaining defendants. Counsel for the two corporations being of the opinion that a verdict which convicted the principal and acquitted the agents through which the principal allegedly acted was a legally impossible verdict, filed motions requesting the court to set aside the verdicts of conviction and discharge the corporations or to grant these corporations a new trial. The court denied these motions on May 29, 1941 and on that day entered judgment on the verdicts against the corporations and assessed a fine against the American Medical Association in the sum of $2,500 and against the Medical Society of the District of Columbia in the sum of $1,500.

During the course of the trial the court refused to permit the defendants to prove that Group Health Association, a membership corporation not for profit, organized under the laws of the District of Columbia, received a subsidy of $40,000 from Home Owners Loan Corporation and other subsidies from private sources; refused to permit the defendants to prove coercion to require employees of various government departments to join Group Health Association; refused to permit the defendants to prove that Group Health Association was guilty of advertising for and soliciting of members; refused to permit the defendants to prove that they had been advised by the best legal talent available that Group Health Association was illegally practicing medicine and engaged in the operation of an insurance company contrary to law, and refused to permit the defendants to prove that Group Health Association and the doctors employed by it were violating the Principles of Medical Ethics of the medical profession. The principal reason given by the court for refusing to permit the defendants to make the aforesaid proof was that even if Group Health Association was violating the law that fact would not authorize or warrant the defendants violating the law in an effort to restrain them and that therefore the proof was immaterial. The court seemed to be of the opinion that if the activities of Group Health Association were contrary to law it was the duty of the public prosecutor to prosecute them and not the privilege of the defendants to attempt to restrain them.

The court submitted to the jury for its determination as a question of fact whether the defendants combined or conspired to restrain trade in the District of Columbia unreasonably and the jury found the two corporations guilty. The court has refused to set the verdicts aside.

The Board of Trustees has been advised by counsel for the American Medical Association that new and novel questions of law are involved in this case and that there is a fair chance that the Court of Appeals of the District of Columbia will decide that the District Court committed reversible error in many of its rulings on the evidence, in refusing to permit the defendants to make proof as hereinbefore stated, in denying the motions of the defendants to direct a verdict in their favor, in certain instructions which it gave to the jury and in denying the motions of the defendants to set aside the verdict of the jury finding the two corporations guilty when the jury had found all the alleged agents of the corporations not guilty. Counsel for the American Medical Association further advise that even should the Court of Appeals refuse to reverse the various rulings of the trial court and grant a new trial there is a fair chance that the Supreme Court of the United States will reverse the previous ruling of the Court of Appeals that the practice of medicine is a trade or will hold that the defendants are in the same class as labor unions and not subject to the provisions of the Sherman Antitrust Law or will hold that the evidence fails to show that the defendants combined and conspired to restrain trade or will hold that the trial court committed reversible error in its rulings during the course of the trial or in its instructions to the jury.

The Board of Trustees recommends to the House of Delegates that counsel for the American Medical Association be requested and directed to appeal the judgment based on the verdict of guilty against the American Medical Association in the case of *United States* v. *American Medical Association et al.*, District Court of the United States for the District of Columbia, number 63221.

In submitting this report, the Chairman of the Board of Trustees discussed to some extent the possibilities concerning the nature of future developments with respect to the case of the United States versus the American Medical Association et al.

Dr. Booth, on request of the Speaker, presented to the House Mr. E. M. Burke, counsel for the American Medical Association, who outlined the situation with respect to this case.

After discussion, this report of the Board of Trustees, which had been referred to the Reference Committee on Executive Session, was considered by the entire House in executive session, on motion of Dr. Thomas A. McGoldrick, chairman of that reference committee, seconded by Dr. George W. Kosmak, New York, and carried.

Dr. Holman Taylor, Texas, moved that the House of Delegates heartily approve and commend this report of the Board of Trustees, and the motion was duly seconded.

Dr. T. K. Gruber, Michigan, moved that Dr. Taylor's motion be amended by adding to it the statement that the Board of Trustees be instructed by the House of Delegates to direct counsel for the American Medical Association to appeal the judgment, based on the verdict of guilty, against the American Medical Association in the case of *United States* v. *American Medical Association et al.*, District Court of the United States for the District of Columbia, number 63221, and the amendment was accepted by Dr. Taylor and his second.

After discussion, Dr. Taylor's motion as amended was carried by a rising vote, there being not one dissenting vote.

Report and Supplementary Report of Reference Committee on Military Preparedness

Dr. Harvey B. Stone, Chairman, presented the following report of the reference committee:

1. Resolution on Medical Examination of Draftees: The following resolution was considered by your reference committee after a full hearing:

WHEREAS, The Committee on Distribution of Medical Care is fully cognizant of the present national emergency and the request of the federal government to participate in the national defense program, and the usual willingness of physicians to cooperate has been exemplified during the past eight months; and

WHEREAS, The medical profession is still willing to cooperate in this program; and

WHEREAS, The workers on all other government projects are fully compensated for their efforts; and

WHEREAS, The examiners for National Youth Administration, Civil Service and Recruiting Service are compensated for their services; and

WHEREAS, The work of examining draftees requires a great expenditure of time and effort on the part of the examining physician as well as actual cash expense; and

WHEREAS, It appears that this program will continue indefinitely and perhaps permanently; therefore be it

Resolved, That the Committee on Distribution of Medical Care recommends to the Executive Committee of the Council of the Michigan State Medical Society, that it instruct the delegates of that society to the American Medical Association to present on the floor of the House of Delegates of the American Medical Association in 1941 this problem in order that a procedure may be established for compensating the local advisory and draft board examiners for their physical examination of draftees.

Communication Concerning Uncompensated Services Rendered by Physicians to the Selective Service: The following communication was also considered by your reference committee at the time it considered the Resolution on Medical Examination of Draftees:

At a recent meeting of the Arkansas Medical Society, communications from different sections of the state were presented protesting the uncompensated services being rendered by physicians to Selective Service.

It is not unusual for a physician in this capacity to be asked to examine from six to ten men in one day, using his own office and office equipment and taking the time that often his pay patients want. Thus he is not only donating his services but also paying for the privilege of doing so in lost fees.

In the districts of some advisory boards no "specialists" in eye, nose and throat, etc., reside and draftees are sent to medical advisory boards in other districts for such examinations, thus requiring the physicians on such boards to do the work not only from their own district but from other districts as well.

Selective Service is functioning more nearly perfectly than any other branch of the preparedness program, and no small share of the honor for its success is due to the work of physicians.

We have a communication from one who has discussed this matter with the Committee on Military Affairs of the House of Representatives in Congress, which says "this condition exists largely because of the fact that various medical associations agreed on behalf of their members to perform this service free of charge as a patriotic contribution to the defense program." If this is true, we feel sure that the heads of "various medical associations" made such an agreement without giving serious thought as to the time and financial loss required of the physicians who do the work.

We feel that any action asking for an adjustment of this condition should come from organized medicine and we are therefore appealing to the American Medical Association asking that such action as is deemed expedient be taken to call to the attention of the War Department the amount of work now being done by physicians gratis and ask a correction of the injustice by (1) giving remuneration to the physicians who serve as examining physicians and medical advisory board members for actual time employed, making it retroactive to include work already done, or (2) equipping an office in each local board office, or county or district and furnishing a full time medical officer who would do all the examining. This would not necessitate a medical officer for each board as one medical officer could serve several boards.

S. J. ALLBRIGHT, M.D.
L. T. EVANS, M.D.
C. E. DUGAN, M.D.
} Special Committee.
ARKANSAS MEDICAL SOCIETY.

Since there are many laymen, many more in fact than physicians, serving the Selective Service in various capacities without payment, who comprise the members of the local boards, the appeals boards, the government appeals agents and others in ancillary capacities, it would be against the adopted policy of the American Medical Association to recommend that physicians serving these local boards be paid, because the American Medical Association has pledged its utmost service to the government in behalf of the national defense program. To pay the physicians would make these positions political in intent and practice.

Your reference committee therefore recommends that at the present time the resolution and request in the communication be disapproved.

2. Resolution on Eligibility of Women Physicians and Surgeons for Medical Reserve Corps: The following resolution was considered after a full hearing:

WHEREAS, The United States of America is at present engaged in a vast preparedness program which includes a listing of members in the Medical Reserve Corps available for active service; and

WHEREAS, There are approximately eight thousand women physicians and surgeons in the United States, and women physicians and surgeons of America demonstrated their fitness for wartime service during the first World War when they financed units and staffed hospitals with well trained officers, in France and Serbia; and

WHEREAS, The United States government has to date taken no cognizance of these women physicians in time of national emergency; and

WHEREAS, The government has already granted women nurses Army rating with proper rank, pay, and war-risk insurance; and

WHEREAS, The Medical Society of the State of New York has gone on record recommending that the women physicians and surgeons of America be made eligible for the Medical Reserve Corps of the United States Army and Navy and be granted full privileges thereof; therefore be it

Resolved, That the American Medical Association go on record to this effect, and that a request go to the Surgeon Generals of the Army and the Navy to make women physicians and surgeons of the United States eligible for the Medical Reserve Corps of the Army and the Navy with full privileges thereof.

The hearing developed the fact that legislation by Congress would be required to effect this change in the qualification of medical reserve officers by amending the present law and adding "female" to the present legal qualifications for a commission in the Medical Reserve Corps. After hearing from the representatives of the Surgeon General of the Army and listening to other statements, this reference committee feels that it would not be to the best interests of the defense program to advocate legislation at this time. In addition to the changes in regulations and laws, it would demand reconsideration of the program for construction of military hospitals in addition to changes in the plans for housing of officers. This would hamper and immediately throw into confusion existing procedures under which the medical aspects of the defense program are developing. From a larger point of view the necessary absence of so many male physicians from civilian areas will give opportunity to eight thousand women physicians for a full task and make theirs a valuable patriotic contribution should they focus their activities on service to the civilian population. Moreover, they may apply for positions in the U. S. Public Health Service, in which many vacancies exist and in which their services can be utilized without resort to legislation.

Your reference committee therefore recommends that the propositions advocated in the resolutions from the delegations from New York and Pennsylvania [1] be disapproved at this time.

3. Resolution on Patriotic Services of Native American and Foreign Born Physicians: The following resolution concerning refugees from foreign lands, who for the most part have first citizenship papers, received sympathetic attention and consideration from your reference committee:

WHEREAS, The regulations for the granting of commissions in the armed forces of the country exclude foreign born physicians and also to an extent native American doctors who are graduates of foreign medical schools; and

WHEREAS, These regulations thus enforced work an undue hardship on the patriotic native members of our profession who leave their homes, institutional positions and private practices to perform full military duty, thus placing their civilian status and practice in the hands of those to whom the high privilege of service is denied by the aforesaid regulations; and

WHEREAS, There may be found places where these foreign born physicians may serve the country, which would in no way be considered by proper authority as "key positions," and such service in such non-key positions would not entail any risk to the security of our national defense; and

WHEREAS, The house of delegates of the Medical Society of the State of New York has instructed its delegation to the House of Delegates of the American Medical Association to present these facts for consideration and action; therefore be it

Resolved, That the American Medical Association make proper representation to the federal authorities concerned with these matters to the end that the patriotic contributions of military service by native American physicians, graduates of grade A medical schools, be not a handicap to them, throughout and after their period of service, by the loss of their practices and hospital associations because these were taken over by the men from whom the privilege to serve the government is withheld.

The Surgeon Generals of the Army and Navy are debarred by regulations from granting commissions to foreign physicians. It is comprehended that their presence in the civilian community constitutes a handicap not only to our native physicians who are called on to serve but in many instances to these newly adopted citizens who are desirous of proving their entire devotion to this country, whose open handed hospitality has sheltered them from oppression. Your reference committee feels that this subject has many aspects which need more study to the end that proper disposition may be made of these physicians from foreign shores who are recently arrived among us and recommends that this matter be referred to the Committee on Medical Preparedness of the American Medical Association, with the hope that some type of service may be found wherein these men may serve this government without necessarily being commissioned as medical officers in our armed forces.

4. Resolution on Continuation of Supply of Well Trained Medical Graduates: The following resolution was thoroughly discussed:

WHEREAS, The experience of belligerent nations in the World War and in the present conflict amply demonstrates the necessity of insuring a continuing supply of well trained medical graduates; and

WHEREAS, There will probably be a shortage of medical men necessary for the proper functioning of the military services and for the care of the civilian population; and

WHEREAS, The United States Army in 1917-1918 permitted medical students in active military service to be transferred to the reserve for the purpose of completing their medical course; and

WHEREAS, A number of medical students were already inducted into service before the issuance of the recent Selective Service regulations authorizing deferment of medical students and premedical students already matriculated in medical schools; and

WHEREAS, The Medical Society of the State of New York, with these facts in mind, instructed its delegates to the American Medical Association to introduce a resolution memorializing the Surgeon General of the Army to give consideration to medical students already inducted into active service in the present emergency; therefore be it

Resolved, That the American Medical Association memorialize the proper military authorities and the Director of Selective Service to release those medical students already inducted into service and enable them to return for completion of their medical studies.

Information at hand shows that exceedingly few medical students have been inducted into the army. The deferment of medical students and premedical students who have successfully completed their courses is already being provided for by the national Selective Service System. Your reference committee feels that it is a matter requiring continuing study and observation to watch the effects of the recommendations of the national Selective Service System on the local boards throughout the country and that any action at this time would be premature, particularly since the trend of the attitude of the War Department and the national Selective Service System is definitely toward the conservation of medical talent and the encouragement of the continued pursuance of premedical and medical courses as occupations in the interest of the safety and health of the nation.

Your reference committee therefore recommends that no action be taken on this resolution at this time, and that the resolution be tabled.

Respectfully submitted.

HARVEY B. STONE, Chairman.
JAMES E. PAULLIN.
SAMUEL J. KOPETZKY.
SAM E. THOMPSON.
JOHN H. O'SHEA.
E. H. SKINNER.
JOSEPH F. SMITH.

Dr. Stone then presented the following supplementary report of the reference committee:

Resolution on Appeal of British Red Cross for American physicians: A resolution from New York State introduced at the end of this morning's session concerns the attitude of the American Medical Association toward the sending of volunteer medical personnel for service with foreign nations. It recommends that the House of Delegates authorize the Board of Trustees of the American Medical Association after appropriate study to formulate and express through THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION a guiding policy in this matter. The chairman of your reference committee reports that it has been impossible to arrange a formal meeting of the committee to consider this matter, but that five of the members personally have approved of the resolution and it is therefore recommended that the resolution be adopted.

HARVEY B. STONE, Chairman.

On motions of Dr. Stone, duly seconded and carried, each of the four sections of the report of the reference committee was adopted after discussion.

Dr. Stone moved the adoption of the supplementary report of the reference committee, and the motion was seconded by Dr. Arthur T. McCormack, Kentucky. After discussion, the House adopted a motion, duly seconded and carried, to amend the supplementary report of the reference committee to indicate that the resolution referred to in it should be adopted with the omission of the "whereases." The supplementary report of the reference committee as amended was then adopted.

On motion of Dr. Stone, seconded by Dr. H. B. Everett, Tennessee, and carried, the report and the supplementary report of the reference committee as amended were adopted as a whole.

Vote of Appreciation

On motion of Dr. James Q. Graves, Louisiana, seconded by Dr. Arthur J. Bedell, Section on Ophthalmology, and Dr. Thomas K. Lewis, New Jersey, and carried, a rising vote of appreciation was extended to Mr. E. M. Burke.

It was moved by Dr. R. W. Fouts, Nebraska, seconded by Dr. George W. Kosmak, New York, and carried, that the House rise from executive session and continue in regular session.

The executive session adjourned at 4:35 p. m.

Tuesday Afternoon (Continued)

The House reconvened in regular session at 4:35 p. m. with Dr. H. H. Shoulders, Speaker, presiding.

Proposed Amendment to Constitution

Dr. William R. Molony Sr., California, in behalf of Dr. E. H. Cary, Texas, presented the following proposed amendment to the Constitution, which must lie over for consideration at the annual session of the House in 1942:

WHEREAS, The Board of Trustees of the American Medical Association was set up at a time when numerically the Association was approximately one-third its present strength; and

WHEREAS, Because of the great variety of conditions existing throughout the country, largely because of geographic and population problems, it seems desirable to provide a greater spread of membership for the Board, even though it is not at all a matter of representation in the sense that the House of Delegates is a representative body; therefore be it

1. There is no record in the official minutes of the presentation to the House of a resolution from Pennsylvania on this subject.

Resolved, That article 6, section 1 of the Constitution of the American Medical Association be amended by substituting the word "eleven" for the word "nine" as the last word of the fourth line of that section, so that article 6, section 1, will then read: "SECTION 1.—The general officers of the Association shall be a President, a President-Elect, a Vice President, a Secretary, a Treasurer, a Speaker and a Vice Speaker of the House of Delegates, and eleven Trustees"; and be it further

Resolved, That article 6, section 1 of the Constitution of the American Medical Association be amended to read as follows:

"SEC. 3.—Two Trustees shall be elected annually except every fifth year, when three shall be elected, each to serve for five years, or until his successor is elected and installed: Provided, that at the session of the House of Delegates at which this amendment is adopted three Trustees shall be elected to serve five years and one to serve four years. No Trustee shall serve for more than two consecutive terms, but a Trustee elected to serve an unexpired term shall not be regarded as having served a term unless he has served three or more years."

Report of Reference Committee on Hygiene and Public Health

Dr. Arthur T. McCormack, Chairman, presented a report, which as amended reads:

Your reference committee has read, with interest, the report of the Council on Medical Education and Hospitals in regard to medical students and interns and recommends that this portion of the report of the Council be approved and that the deans of medical schools and the staffs of approved hospitals provide for regular health examinations and annual reexaminations for all medical students and interns.

Respectfully submitted.

ARTHUR T. MCCORMACK, Chairman.
WARREN F. DRAPER.
LEWIS B. BATES.
L. W. LARSON.
WILLIAM D. JOHNSON.

It was moved by Dr. McCormack and seconded by Dr. Frederic E. Sondern, New York, that the report of the reference committee be adopted. On motion of Dr. R. W. Fouts, Nebraska, duly seconded and carried, the word "annual" was inserted before "reexamination" in the last sentence. The report as amended was then adopted.

Appreciation of American Medical Women

Dr. Harry H. Wilson, California, moved that the House go on record as applauding and appreciating the spirit of the American medical women in offering services to the United States government, and the motion was seconded by Dr. Arthur T. McCormack, Kentucky, and Dr. Walter E. Vest, West Virginia, and adopted unanimously.

On motion of Dr. Edward M. Pallette Sr., California, duly seconded and carried, the House recessed at 4:45 p. m. to reconvene at 1 p. m., Thursday, June 5, 1941.

Third Meeting — Thursday Afternoon, June 5

The House of Delegates was called to order at 1:05 p. m. by the Speaker, Dr. H. H. Shoulders.

Report of Reference Committee on Credentials

Dr. G. Henry Mundt, Chairman, stated that a total of 171 delegates had been seated.

Roll Call

The Secretary called the roll and announced that more than a quorum had responded.

Presentation of the Minutes

It was moved by Dr. Arthur T. McCormack, Kentucky, seconded by Dr. E. G. Wood, Tennessee, and carried, that the House dispense with the reading of the minutes.

Report of Board of Trustees

Dr. Arthur W. Booth, Chairman, presented the following report, which was adopted on motions duly seconded and carried:

1. Resolution Authorizing Establishment of a Health Exhibit for the Public at Cities Where Annual Sessions are Held: The Board of Trustees is in full sympathy with the objectives of the California Medical Association in stressing the importance of the education of the general public in problems of health and sound principles of medical practice by the use of exhibit material. It has on several occasions devoted considerable time to the question of how exhibit material such as appears in the Scientific Exhibit at the annual sessions might be utilized. However, after careful consideration the utilization of this material has not been found feasible, for several reasons: i. e., the material belongs to the exhibitors, and most of it is not pointed suitably toward the lay public; it is scientific in nature and would not be practical for use for public education unless some one was in attendance to explain it. It is indeed doubtful that the exhibitors would go to the city at which an annual session is held a week in advance of the session or remain a week after its close to demonstrate to the public, but, if they agreed to do so, their expense would have to be defrayed.

The Academy of Medicine of Cleveland has provided a health exhibit during the meeting of the American Medical Association, and the Bureau of Exhibits in the headquarters office has furnished material for exhibits in various parts of the country. The advantages of permanent health exhibits are well recognized. Such exhibits are maintained in Chicago, New York, Pittsburgh, Cleveland, and Rochester, N. Y.

The Board will be glad to bear in mind the desirability of fostering such exhibits as opportunity is offered.

2. Resolution Requesting Appointment of Committee to Confer with Specialty Boards: Concerning the resolution with regard to specialty boards, the Board of Trustees feels that this is a matter that cannot be acted on precipitately. The Board will study the records, develop all the facts by proper conferences, in cooperation with the Council on Medical Education and Hospitals and the Specialty Boards, and will try to work out a plan for presentation later to this House.

Respectfully submitted. ARTHUR W. BOOTH, Chairman.

Report of Reference Committee on Medical Education

Dr. Walter G. Phippen, Chairman, presented the following report, which was adopted on motion of Dr. Phippen, seconded by Dr. Arthur T. McCormack, Kentucky, and carried:

Your Reference Committee on Medical Education held a hearing to consider the supplementary report of the Council on Medical Education and Hospitals regarding the essentials of an acceptable school for clinical laboratory technicians. Members of the Council appeared before it as did many others who were interested in the subject, and the essentials were thoroughly discussed and changed in some respects by your reference committee to read as follows:

ESSENTIALS OF AN ACCEPTABLE SCHOOL FOR CLINICAL LABORATORY TECHNICIANS

PREAMBLE

Two organizations are primarily concerned with the training of clinical laboratory technicians: the Council on Medical Education and Hospitals of the American Medical Association and the Board of Registry of Medical Technologists of the American Society of Clinical Pathologists. The Council functions by inspecting, reporting and approving these schools, while the Board of Registry investigates and certifies the competence of the technicians.

The Council, with the cooperation of the Board of Registry, has promulgated standards for this type of training for the information of physicians, hospitals, prospective students and others and for the protection of the public.

Technicians are being trained in these schools to work under the direction of qualified physicians and not as independent practitioners of laboratory work.

I. ADMINISTRATION

1. Acceptable schools for training laboratory technicians may be conducted by general hospitals or state health laboratories affiliated with hospitals where the majority of the student's practical training is received. This arrangement should not discourage affiliations between the hospital and universities, colleges, public health laboratories or other hospitals.

2. All training of technicians shall be under competent medical control.

3. Resources for continued operation of the school should be insured through regular budgets, gifts or endowments but not entirely through students' fees. Experience has shown that

commercial schools operated for profit frequently do not adhere to proper ethical and educational standards and therefore are not acceptable.

II. Organization

1. Adequate space, light and modern equipment should be provided in the laboratory department. A library containing up to date references, textbooks and scientific periodicals pertaining to clinical laboratory work and pathology should be maintained or be readily accessible in the institution.

2. Satisfactory record systems should be provided for all work carried on in the department. Monthly and annual classifications of the work of the department should be prepared.

3. Transcripts of high school and college credits and other credentials must be available. Records should be kept of each student's attendance and grades as well as of the number and type of tests performed. In addition a synopsis of the complete curriculum should be on file in the office of the laboratory director. This curriculum should include the rotation of assignments, the outline of instruction supplied by the laboratory and a list of the prepared specimens which are used to augment the experiences of the student.

4. At least two or more students should be enrolled in each class. Approval is automatically withdrawn if a school does not have any students for a period of two years, unless a satisfactory reason for this is given.

III. Faculty

1. The school should have a competent teaching staff. The director must be a graduate in medicine who holds the certificate of the American Board of Pathology or who has had the equivalent in training and experience. He should take part in and be responsible for the actual conduct of the training course. He should be in daily attendance for sufficient time to supervise properly the laboratory work and teaching.

2. In laboratory practice the enrolment should not exceed one student to each member of the teaching staff. The staff should include not less than one salaried instructor who is a registered technician or eligible for registration, in addition to the laboratory director. In order to be considered as an instructor, a technician must have had three years of experience, while members of the hospital staff or visiting instructors must have regular assignments that cover a complete course prescribed in the Essentials.

IV. Prerequisites for Admission

Candidates for admission should be able to satisfy one of the following requirements:

(*a*) Two years of college work, including chemistry and biology at an accredited college or university. After Jan. 1, 1943 this requirement shall read: Two years of college work, including general chemistry, quantitative chemistry, and biology at an accredited college or university. Bacteriology may be substituted for biology. Organic chemistry and physics are highly recommended.

(*b*) Graduation at a school of nursing recognized by the state board of nurse examiners and, in addition, college chemistry. After Jan. 1, 1943 requirements for nurses shall include one year of college work, thirty semester hours (forty-five quarter hours) including courses in chemistry and biology.

V. Curriculum

1. The course of training should be not less than twelve months in duration and should include the following subjects: biochemistry, hematology, bacteriology, parasitology, histology and serology. The training should also include a course in record keeping.

2. The instruction should follow a planned outline similar to the Model Curriculum of the Board of Registry of Medical Technologists and should be accomplished by text assignments, lectures or informal discussions, demonstrations, supervised practice, quizzes and written, oral and practical examinations.

VI. Clinical Material

Each student should receive practice training, adequate in kind and amount, under competent supervision, in a hospital laboratory. The hospital should be registered and be otherwise acceptable to the Council on Medical Education and Hospitals of the American Medical Association and have a minimum of two thousand yearly admissions. A sufficient amount of clinical material should be available to permit the student to comply with the requirements of the Board of Registry. If the hospital is not able to supply all this material through its routine tests and examinations, artificial mediums should be provided.

VII. Ethics

1. Exorbitant fees and commercial advertising should be considered unethical.

2. Schools conducted primarily for the purpose of substituting students for paid technicians will not be considered for approval.

Respectfully submitted.

Walter G. Phippen, Chairman.
Elbridge J. Best.
Carl R. Steinke.
Louis A. Buie.
Wingate M. Johnson.

Report of Reference Committee on Legislation and Public Relations

Dr. Henry A. Luce, Chairman, presented the following report, which, on motions of Dr. Luce, duly seconded and carried, was adopted section by section and as a whole:

1. Report of Committee on Legislative Activities on Senate and House Bills Indicated: Your reference committee wishes to note that portion of the report on S. 1230 with its reference to sectarian medicine. This was condemned at the New York session last year and your reference committee recommends a reaffirmation of the action then taken; namely, "Your reference committee believes that the reference to osteopathic representation on the council is entirely unwarranted and should be eliminated from the bill."

H. R. 4476, which, as amended, contains similar reference to sectarian participation, is likewise placed by your reference committee in the same category.

Referring to the $150,000,000 Lanham bill, known as H. R. 4545, which provides for the construction of public works made necessary by the national defense program, including the construction of hospitals and other facilities for the care of the sick, your reference committee commends the action of the Committee on Legislative Activities in calling attention to the necessity of exercising constant vigilance to the end that no feature objectionable to public health be instigated.

2. Report of Committee on Legislative Activities on Farm Security Administration Policies: Regarding the Farm Security Administration policy of arriving at understandings with constituent state medical societies as arranged by Dr. R. C. Williams, chief medical officer, prior to making contracts, this procedure is in line with good public policy and in harmony with recommendations of the American Medical Association. For this activity on the part of Dr. Williams, your reference committee wishes to express highest approval.

Your reference committee wishes to call attention to that portion of the report of the Committee on Legislative Activities which reads: "Your committee has had called to its attention a new plan proposed in Oregon which involves creation of corporations controlled by laymen clients of the Farm Security Administration whose stockholders receive benefits of medical care. While the present limitation of participating stockholder to the Farm Security Administration clients does not change the present practice so far as medical benefits are concerned, your committee deplores any development called to its attention which would permit later amendment of the by-laws of the corporation to include other than Farm Security Administration clients contrary to the principles of the American Medical Association and the expressed policies of the Farm Security Administration to cooperate fully with state and county societies through unincorporated groups."

Your reference committee disapproves of the development of any plan whereby nonmembers of the Farm Security Administration can be included in the development of any plan not approved by constituent state medical societies.

Your reference committee notes with pleasure the report of the rehabilitation work done under the supervision of

Dr. Williams. Any attempt to restore health and self respect to American families and to preserve individuality, independence and security is to be commended.

Your reference committee is impressed with the problems presented by migrant individuals in various sections of the country as well as with the "mushroom" communities incident to the erection of defense industries. Awareness of potentially dangerous conditions is essential. It recommends that state and local medical societies become alert to their responsibilities and anticipate the public health problems therein involved.

In conclusion your reference committee quotes, with emphasis, the final paragraph of the report of the Committee on Legislative Activities: "Your committee concludes this report by appealing to a unified profession to continue its interest in the attitude of its own representatives in Congress so that any sound program can be supported and any program which makes undue inroads into the private practice of medicine can be opposed."

Respectfully submitted.

HENRY A. LUCE, Chairman.
F. J. PINKERTON.
JOHN H. FITZGIBBON.
TERRY M. TOWNSEND.
F. S. CROCKETT.

Report of Reference Committee on Miscellaneous Business

Dr. Charles G. Strickland, Chairman, presented the following report:

Your reference committee's meeting room was simply crowded with observers and participants on Tuesday afternoon. Your reference committee was most pleased and gratified at the interest shown in its proceedings and wishes to thank all who took the trouble to attend. It was a grand but always a good natured riot.

1. Resolution on Hospital Privileges for General Practitioners: You will remember this resolution, which was presented to the House of Delegates, referred to this reference committee and referred back to this reference committee for further consideration. Your reference committee has now given further consideration to the matter and believes that the resolution, and particularly its preamble, as drawn, contains too much controversial material to warrant the requested transmission by this House of Delegates. It further believes that in the present form the resolution fails to accomplish the purpose of its sponsors and therefore recommends that this resolution be returned to the Michigan State Medical Society for further consideration and revision.

2. Resolution on Serologic Tests for Syphilis: Your reference committee is informed that a tremendous amount of work has been done on this subject by the U. S. Public Health Service, all of which is in printed form and available on application to the proper authorities. Dr. Parran has made for himself an international reputation on the subject of syphilis. He has associated himself with advisory commission after advisory commission, made up of men most expert in all phases of syphilis, and their findings are a matter of record and available on request. Under these circumstances, your reference committee has no alternative except to recommend that this resolution be rejected.

3. Resolution on Certification in Recognition of Special Qualifications for General Practice: Your reference committee feels that this resolution carries the certification idea a bit too far. Once a medical graduate has passed his state or national board and has been licensed to practice, he is to all intents certified for general practice. From there on, unless he aspires to specialization, recognition must come from the reputation he builds and the place he makes for himself in the hearts of his loyal patients and in his own community. What can empty honors mean to him or a certification which means little and achieves less? After all, is not a good general practitioner the grandest thing in the world of medicine anyway?

Your reference committee has become aware that certification boards are becoming a sore spot in our medical body. It believes that certification boards have their proper place and function, but evidence of unnecessary irritation among the rank and file is becoming evident. It hopes that the House of Delegates will not feel that this reference committee is exceeding its functions if it suggests that the Council on Medical Education and Hospitals may have made a mistake in permitting the specialty boards to slip out from under the control and jurisdiction of the American Medical Association. Perhaps it is not too late, by proper contact methods, to reestablish such control. Meanwhile your reference committee regrets that it cannot recommend for approval the resolution suggesting a certification board for general practitioners.

4. Resolution on Establishment of Central Institute for Research in Nervous and Mental Diseases in the U. S. Public Health Service: Dr. Draper of the Public Health Service attended your reference committee's hearing and explained the plan of the U. S. Public Health Service in detail. This service is authorized to study diseases of mankind.

An eminent advisory council has advised of the need of research in mental and nervous diseases. According to the plan, the Surgeon General proposes to request an appropriation from Congress to finance this research. If such funds are appropriated, the Surgeon General, with the aid of a National Advisory Research Council, proposes (1) to establish a special pavilion in connection with St. Elizabeth's Hospital, Washington, D. C., to care for 200 mental and nervous patients. These patients will be selected from individuals already eligible for government care; (2) to establish the necessary laboratories—biochemical, biologic and pathologic; (3) to make certain grants for private research; (4) to establish certain fellowships, and (5) to act as a coordinator of this research and as a library of results obtained.

It is only fair for your reference committee to remind the House that a similar resolution was defeated at the 1940 session. So far as can now be determined, the cause of this defeat was that (1) the resolution was brought before the House in the final session and consequently had not been studied in detail by a reference committee, and (2) there was in the minds of some delegates a doubt as to the propriety of using government funds for such a purpose. Notwithstanding the action taken at the 1940 session, your reference committee, after careful study, recommends the approval of the resolution as now submitted.

Respectfully submitted.

CHARLES G. STRICKLAND, Chairman.
FREDERIC E. SONDERN.
HOLMAN TAYLOR.
CHARLES E. KIELY.
ANDREW F. MCBRIDE.

The recommendations contained in the first three sections of the report of the reference committee were adopted, on motions of Dr. Strickland, duly seconded and carried.

Dr. Strickland moved the adoption of the fourth section of the report recommending the approval of the establishment of a central institute for research in nervous and mental diseases in the U. S. Public Health Service, and the motion was seconded by Dr. Arthur T. McCormack, Kentucky. After discussion, it was moved by Dr. D. F. Cameron, Indiana, that this section of the report of the reference committee be laid on the table. The motion was seconded by Dr. Arthur J. Bedell, Section on Ophthalmology, and carried.

On motion of Dr. Strickland, seconded by Dr. Robert E. Schlueter, Missouri, and carried, the report of the reference committee with the exception of the fourth section which was tabled was adopted as a whole.

Report of Reference Committee on Executive Session

Dr. Thomas A. McGoldrick, Chairman, presented the following report, which was adopted section by section and as a whole on motions of Dr. McGoldrick, duly seconded and carried:

1. Report of Committee on Legislative Activities Dealing with Veterans' Hospitals: Your reference committee reaffirms the belief that no hospital should be created nor any present one expanded under the Veterans' Administration Act unless there is proved need for such facility in the community, and that need should be determined after consultation of the government representatives with the medical profession in the area of the proposed project.

Your reference committee urges that the committee of this association in charge of the subject of Veterans' Hospitals and

care, despite the difficulties of opposition, continue its watchfulness and reports.

2. Report of Council on Foods and Nutrition Dealing with the National Nutrition Conference for Defense: Your reference committee believes that the resolution contained in this report should be approved.

3. Resolution Requesting Establishment of Procurement and Assignment Agency: Your reference committee agrees that the establishment of such a central authority will facilitate the work of the Committee on Medical Preparedness and will enable the government to select more promptly and more wisely those physicians necessary for military, civilian and industrial service.

4. Statement on Training of Physicians: Your Reference Committee on Executive Session approves this statement on the training of physicians prepared by the joint conference of the Committee on Medical Preparedness and the Council on Medical Education and Hospitals of the American Medical Association and recommends its transmission to the Secretary of War and to the Surgeon General of the Army.

5. Report of Committee on Medical Preparedness: With the printed report of the Committee on Medical Preparedness in the hands of each delegate and filed with this Association, your reference committee feels that the amount of work therein recorded, the quality of it, the thoroughness and the value thereof are apparent to all and need here no further words of appreciation. The report itself tells of the several meetings of the committee composed of members from different parts of this country, of the conferences held with chairmen of state and county committees on medical preparedness, of conferences with government officials of the Army, the Navy, the Public Health Service and the Selective Service System and with members of the Board of Trustees of the American Medical Association. Many of these conferences were held in Washington, D. C., and at the Association's offices in Chicago.

Your reference committee notes the number of questionnaires distributed to doctors of this country—one hundred and eighty thousand—and the number returned, approximately one hundred and fifty thousand—which have been studied, classified and filed. The cards of these questionnaires make the basic information immediately available and of great assistance to the government when needed for military or civilian service.

Your reference committee especially approves the resolutions forwarded to the federal government urging that arrangements be made under which our medical schools could continue to operate to the highest possible advantage; that medical students, interns and residents be permitted to complete their training in hospitals, and that neither essential teaching personnel nor student bodies be depleted to an extent that would interfere with the production of an adequate supply of well trained graduates each year.

Many of the changes which have already been made in the regulations of the Selective Service Act have undoubtedly been the result of the influence of this Committee on Medical Preparedness.

In addition to other duties, the Committee on Medical Preparedness has kept its eyes on legislation in Congress bearing on medical aspects of national defense and on the standing of pending bills and the possible effects of their enactment.

Your reference committee heartily agrees with the Committee on Medical Preparedness in its appreciation of the valuable assistance rendered by the liaison officer of the Medical Corps, Lieut. Col. Charles G. Hutter, M. C., U. S. Army, namely, Colonel Hutter has won the respect and the esteem of all who have been associated with him.

The report of the Committee on Medical Preparedness indicates the fulfilment of those promises made by the House of Delegates at the 1940 session in New York and the assurance to the government of continued complete support and cooperation.

Respectfully submitted.

THOMAS A. MCGOLDRICK, Chairman.
DEERING G. SMITH.
E. S. HAMILTON.
E. G. WOOD.
JAMES R. MILLER.
C. H. HENNINGER.

Address of Dr. Miguel Acuna

The Secretary stated that he had a communication from the Secretary-General of the Chilean Medical Association announcing the appointment of Dr. Miguel Acuna as its official representative to the annual session of the American Medical Association, as well as a letter from the Honorable R. Michel, Chilean Ambassador.

The Secretary, on request of the Speaker, conducted Dr. Miguel Acuna to the platform, after which Dr. Acuna addressed the House as follows:

Mr. President, Mr. Speaker, Members of the House of Delegates: It is a great honor for me to thank you for the cordial invitation received from the American Medical Association to attend the Ninety-Second Annual Session in Cleveland.

The Chilean Medical Association, informed about this invitation, has conferred on me its official representation.

The great development of American medicine is well known and admired in my country. With special sympathy we have witnessed how you have become leaders in the world. Naturally, we hope to have the opportunity to meet American medical men and to know their institutions at first hand.

It is a privilege for me to have visited, during the last eight months, various medical centers of the United States, and I have learned many things. I am glad to state that I have found that the reality exceeds my own expectations through my readings.

Furthermore, as a final crown, I am attending the annual session of the American Medical Association, which constitutes the most outstanding event of medical progress for the enlightenment and benefit of all nations and to the great honor of American medicine. On my return home it will be my purpose to intensify our cultural relations and to study the ways and means by which this can be accomplished, as well as to avoid the problem that existed until the outbreak of the war, namely, that, economically speaking, Chile and other South American nations were further removed from the United States than from Europe, in spite of the geographic reality and the common interests of the Americas.

The Chilean Medical Association desires to maintain cordial relations with your great organization, and it is a pleasure for us to do homage to the American Medical Association and to extend our best wishes for permanent prosperity and success in fulfilling its high ideals of scientific advancements and unselfish services to the community.

I thank the House of Delegates for the invitation to attend its meetings and for the opportunity of expressing my friendship. Thank you.

ELECTION OF OFFICERS

The Speaker declared the next order of business to be the election of officers.

Election of President-Elect

Dr. Arthur T. McCormack, Kentucky, nominated for President-Elect Dr. Fred W. Rankin, Lexington, Ky., and the nomination was seconded by Dr. A. W. Adson, Minnesota; Dr. James E. Paullin, Section on Practice of Medicine; Dr. E. G. Wood, Tennessee; Dr. James Q. Graves, Louisiana; Dr. E. H. Cary, Texas; the delegates from the Washington State Medical Association; Dr. Louis A. Buie, Section on Gastro-Enterology and Proctology; Dr. J. Newton Hunsberger, Pennsylvania; Dr. J. N. Baker, Alabama; Dr. Felix J. Underwood, Mississippi; Dr. Walter G. Phippen, Massachusetts; Dr. Henry Cook Macatee, District of Columbia; Dr. William H. Myers, Georgia; Dr. Walter E. Vest, West Virginia; Dr. Edwin S. Hamilton, Illinois; Dr. F. S. Crockett, Indiana; Dr. Thomas F. Thornton, Iowa; Dr. Samuel J. Kopetzky, New York; Dr. William Weston, Section on Pediatrics, and Dr. A. A. Walker, Alabama, who moved that the nominations be closed. The motion was seconded by Dr. Clyde L. Cummer, Section on Dermatology and Syphilology, and carried unanimously. Dr. McCormack then moved that the Secretary cast the ballot of the House for Dr. Fred W. Rankin as President-Elect. The motion was seconded by Dr. H. B. Everett, Tennessee, and carried unanimously.

The Secretary cast the vote of the House for Dr. Fred W. Rankin, Lexington, Ky., for President-Elect of the American Medical Association, and the Speaker declared Dr. Rankin so elected.

Dr. William Weston, Section on Pediatrics, moved that the Speaker appoint a committee to notify Dr. Rankin of this action, and the motion was seconded by Dr. J. N. Baker, Alabama, and carried. The Speaker appointed Drs. Arthur T. McCormack, Kentucky; A. A. Walker, Alabama, and Edward R. Cunniffe, New York, to notify Dr. Rankin of the action taken and to conduct him to the House.

Election of Vice President

Dr. James E. Paullin, Section on Practice of Medicine, nominated for the office of Vice President a former member of the House, Dr. Charles A. Dukes, Oakland, Calif., and the nomination was seconded by Drs. Harvey B. Stone, Maryland; Robert A. Peers, California; Henry A. Luce, Michigan; Horace J. Brown, Nevada, and Thomas F. Thornton, Iowa. Dr. Arthur J. Bedell, Section on Ophthalmology, moved that the nominations be closed. The motion was seconded by Dr. Clyde L. Cummer, Section on Dermatology and Syphilology, and carried.

On motion of Dr. W. E. Kittler, Illinois, seconded by Dr. E. H. Cary, Texas, and carried unanimously, the Secretary cast the vote of the House for Dr. Charles A. Dukes, Oakland, Calif., to serve as Vice President of the Association for the ensuing year, and the Speaker declared Dr. Dukes so elected.

The Speaker appointed as a committee to notify Dr. Dukes Dr. James E. Paullin, Section on Practice of Medicine, and Dr. Robert A. Peers, California.

Election of Secretary

Dr. William R. Brooksher, Arkansas, nominated Dr. Olin West, Chicago, to succeed himself as Secretary of the American Medical Association, and the nomination was seconded by Drs. Walter E. Vest, West Virginia; Joseph F. Smith, Wisconsin; William Weston, Section on Pediatrics; Andrew F. McBride, New Jersey; Felix J. Underwood, Mississippi; Robert E. Schlueter, Missouri, and H. B. Everett, Tennessee.

Dr. John H. O'Shea, Washington, moved that the nominations be closed. The motion was seconded by Dr. E. G. Wood, Tennessee, and carried.

Dr. O'Shea then moved that the Vice Speaker cast the ballot of the House for Dr. Olin West as Secretary of the American Medical Association for the ensuing year, and the motion was seconded by Dr. H. A. Luce, Michigan, and carried unanimously.

The Vice Speaker cast the vote of the House for Dr. Olin West, Chicago, as Secretary of the American Medical Association for the ensuing year, and the Speaker declared Dr. West elected to the office.

Election of Treasurer

Dr. Arthur W. Booth, Chairman, Board of Trustees, nominated Dr. Herman L. Kretschmer, Chicago, to succeed himself as Treasurer of the American Medical Association, and the nomination was seconded by Drs. Robert E. Schlueter, Missouri; Samuel J. Kopetzky, New York; John Z. Brown, Utah, and E. S. Hamilton, Illinois.

On motion of Dr. Samuel J. Kopetzky, New York, seconded by Dr. Burt R. Shurly, Section on Laryngology, Otology and Rhinology, and carried, the nominations were closed.

Dr. Louis A. Buie, Section on Gastro-Enterology and Proctology, moved that the Secretary cast the ballot of the House for Dr. Herman L. Kretschmer as Treasurer of the American Medical Association for the ensuing year, and the motion was seconded by Dr. Olin H. Weaver, Georgia, and carried unanimously.

The Secretary cast the vote of the House for Dr. Herman L. Kretschmer, Chicago, as Treasurer of the Association for the ensuing year, and the Speaker declared Dr. Kretschmer so elected.

Address of President-Elect Fred W. Rankin

Dr. Arthur T. McCormack, Kentucky, on behalf of the committee, presented to the House of Delegates the President-Elect of the American Medical Association, Dr. Fred W. Rankin, Lexington, Ky., who addressed the House as follows:

Mr. Speaker, Members of the House of Delegates: For the honor you do me in choosing me as your President-Elect for the coming year I am grateful. That this honor does not come to me as an individual but as a representative of a section of the medical profession of the United States I am well aware. I accept this office in a spirit of humility, for as I pass in review the many eminent men who have preceded me in this capacity I am conscious of my unworthiness, and I am also impressed with the feeling of responsibility which this office carries. In these troublous times, the nation as a whole and the medical profession in particular face many and serious problems, and to whatever objectives the medical profession of the United States has dedicated itself I pledge you my sincere cooperation and wholehearted effort.

Gentlemen of the House of Delegates, I thank you again.

Election of Speaker of the House of Delegates

Dr. R. W. Fouts, Vice Speaker, took the Chair and stated that the next order of business was the election of a Speaker of the House of Delegates.

Dr. H. B. Everett, Tennessee, nominated Dr. Harrison H. Shoulders, Nashville, Tenn., to succeed himself as Speaker of the House of Delegates, and the nomination was seconded by Drs. Arthur T. McCormack, Kentucky, and William Weston, Section on Pediatrics, after which it was moved by Dr. E. S. Hamilton, Illinois, seconded by Dr. Burt R. Shurly, Section on Laryngology, Otology and Rhinology, and carried, that the nominations be closed.

Dr. Arthur J. Bedell, Section on Ophthalmology, moved that the Secretary be empowered to cast the vote of the House for Dr. Harrison H. Shoulders, Nashville, Tenn., as Speaker of the House of Delegates, and the motion was seconded by Dr. James Q. Graves, Louisiana, and carried unanimously.

The Secretary cast the vote of the House for Dr. Harrison H. Shoulders as Speaker of the House of Delegates for the ensuing year, and the Vice Speaker declared him so elected.

Election of Vice Speaker of the House of Delegates

The Speaker resumed the Chair and declared the next order of business to be the election of a Vice Speaker of the House of Delegates.

Dr. E. S. Hamilton, Illinois, nominated Dr. R. W. Fouts, Omaha, to succeed himself as Vice Speaker of the House of Delegates, and the nomination was seconded by Drs. William H. Myers, Georgia; Thomas F. Thornton, Iowa; H. B. Everett, Tennessee; Homer L. Kerr, Missouri; J. Newton Hunsberger, Pennsylvania, and Frank E. Reeder, Michigan.

Dr. Olin H. Weaver, Georgia, moved that the nominations be closed, and the motion was seconded by Dr. Arthur T. McCormack, Kentucky, and carried unanimously.

On motion of Dr. Arthur T. McCormack, Kentucky, seconded by Dr. W. E. Kittler, Illinois, and carried unanimously, the Secretary cast the vote of the House for Dr. R. W. Fouts, Omaha, to succeed himself as Vice Speaker of the House of Delegates for the ensuing year, and the Speaker declared Dr. Fouts so elected.

Election of Trustees

ADDRESS OF DR. THOMAS S. CULLEN

The Speaker declared the next order of business to be the election of Trustees and requested the privilege of the House to present Dr. Thomas S. Cullen, retiring Trustee who addressed the House as follows:

For years it was my privilege to sit in this House of Delegates, first as a representative of the Section on Obstetrics and Gynecology and later as one of the representatives of our good old state of Maryland.

Twelve years ago I was elected a member of the Board of Trustees, and it has been my good fortune to sit on this Board ever since.

I need say nothing about the House of Delegates, but I have ever been impressed by the sincerity and fairness of its members and by the vast amount they have accomplished in the short time they have been in session each year. The great value of their deliberations has been amply shown by the tremendous advance of the American Medical Association.

As the Trustees are the appointees of the House of Delegates, it is only right and proper that about once in twenty-five years the Trustees should give a short personal, general accounting of their activities in addition to their annual report. As the senior and retiring member, I shall now do so in a few words.

The nine members of the Board of Trustees who have the pleasure of being your representatives between annual sessions come from all parts of the United States. The farthest west has been Portland, Ore.; the farthest east, Boston, Massachusetts.

At nearly every meeting all nine members have been present. The only excuses I have ever heard for their being absent have been either illness or death. The members fully realize that they are your representatives and that they must do their utmost to carry out your wishes. Never in the twelve years have I seen any action taken that did not look to the best interests of American medicine.

In financial matters, Dr. Herman Kretschmer, our Treasurer, and the Finance Committee of the Board, have ever been more solicitous about the Association's funds than they have been about their own. The present financial condition speaks eloquently of this fact.

Day after day for weeks I attended the recent trial in Washington, and after each visit I felt prouder and prouder of the American Medical Association and of the Medical Society of the District of Columbia. I do not see how they could have handled a very difficult situation with more wisdom, with more patience, with more forbearance and with more tact.

The publishing of the entire trial in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION was a master stroke of statesmanship. The citizens of this country will gradually learn that the American Medical Association, through its various councils, spends hundreds of thousands each year to improve medical teaching, to improve hospital facilities and to protect the citizens of America. In due time the people of this country will begin to realize that the medical profession is in reality their truest friend.

We have in Dr. Olin West one of the best secretaries and general managers that this or any other country has ever seen. How he has accomplished so much is a marvel to the Trustees.

Dr. Morris Fishbein edits the most up to date and far reaching medical journal to be found anywhere in the world.

The Trustees are more than proud of the fine work done by the personnel of headquarters.

Presidents and Trustees of the Association come and go, but the General Manager and the Editor are endowed with perennial youth and continue to carry out the policies of this House of Delegates in a masterly fashion.

The people of the United States have little idea of the vast amount the American Medical Association is at the present moment doing to help the government place this country on a safe and sure foundation.

In years past we have been accustomed to go to the medical centers of Europe for postgraduate work. After this dreadful war is over, it will require many decades before Europe will recover. In the meantime, America must be the mecca for those desiring postgraduate medical training.

We have the men and facilities to undertake this vital work. We may well be thankful and proud that American medicine is so firmly grounded and that her men have in the past added so much to the betterment of mankind. They will do ever more in the future.

Dr. A. R. McComas, Missouri, moved that this address of Dr. Cullen be transmitted to the Secretary and to Dr. Fishbein and through him to the press, and the motion was seconded by Dr. Harry H. Wilson, California, and carried.

ELECTION OF TRUSTEE TO SUCCEED DR. AUSTIN A. HAYDEN, DECEASED

The Speaker declared nominations in order for the election of a Trustee to succeed Dr. Austin A. Hayden, deceased, for a term ending in 1943.

Dr. G. Henry Mundt, Illinois, nominated for Trustee Dr. Ernest E. Irons, Chicago, to fill the unexpired term of Dr. Austin A. Hayden, deceased, ending in 1943, and the nomination was seconded by Drs. John Z. Brown, Utah; James E. Paullin, Section on Practice of Medicine; M. de la Pila, Puerto Rico; George P. Johnston, Wyoming, and Walter E. Vest, West Virginia.

Dr. Edward M. Pallette Sr., California, moved that the nominations be closed, and the motion was seconded by Dr. Thomas F. Thornton, Iowa, and carried.

On motion of Dr. G. Henry Mundt, Illinois, seconded by Dr. John Z. Brown, Utah, and carried unanimously, the Secretary cast the vote of the House for Dr. Ernest E. Irons, Chicago, as a member of the Board of Trustees to fill out the unexpired term of Dr. Austin A. Hayden, deceased, ending in 1943, and the Speaker declared him so elected.

ELECTION OF TRUSTEE TO SUCCEED DR. THOMAS S. CULLEN

Dr. William H. Myers, Georgia, placed in nomination Dr. Charles W. Roberts, Atlanta, Ga., to succeed Dr. Thomas S. Cullen, Baltimore, whose term expires this year and who, according to the By-Laws, is not eligible for reelection, and the nomination was seconded by Drs. William R. Brooksher, Arkansas; H. B. Everett, Tennessee; W. A. Coventry, Minnesota; Louis A. Buie, Section on Gastro-Enterology and Proctology; Holman Taylor, Texas; Felix J. Underwood, Mississippi; J. Newton Hunsberger, Pennsylvania; James Q. Graves, Louisiana, and Walter B. Martin, Virginia.

On motion of Dr. James E. Paullin, Section on Practice of Medicine, seconded by Dr. J. Newton Hunsberger, Pennsylvania, and carried, the nominations were closed.

Dr. Paullin then moved that the Secretary cast the vote of the House of Delegates for Dr. Charles W. Roberts as Trustee of the Association, and the motion was seconded by Dr. Andrew F. McBride, New Jersey, and carried unanimously.

The Secretary cast the vote of the House of Delegates for Dr. Charles W. Roberts, Atlanta, Ga., as a member of the Board of Trustees for a term of five years, ending in 1946, and the Speaker declared Dr. Roberts so elected.

Nominations for Standing Committees

Dr. Frank H. Lahey, President, submitted the following nominations for standing committees, which, on motions duly made, seconded and carried, were confirmed by the House:

Dr. Walter F. Donaldson, Pittsburgh, to succeed himself on the Judicial Council for a term ending in 1946.

Dr. Frederick A. Coller, Ann Arbor, Mich., to succeed Dr. S. P. Mengel, Wilkes-Barre, Pa., on the Council on Scientific Assembly, for a term ending in 1946.

Dr. Arthur W. Booth, Chairman of the Board of Trustees, placed in nomination for membership on the Council on Medical Education and Hospitals to succeed Dr. Fred Moore, deceased, for a term ending in 1948, the following: Dr. Russell L. Haden, Cleveland; Dr. J. Milton Robb, Detroit, and Dr. Harvey B. Stone, Baltimore.

On request of the Speaker, the tellers spread the ballot, and the Secretary announced that 171 delegates had been registered, 160 delegates had been reported present and 142 votes had been cast, of which Dr. Haden received 45, Dr. Robb 32 and Dr. Stone 65.

The Speaker ruled that, since no nominee had received the majority of the votes cast, the name of the nominee receiving the smallest number of votes, namely, Dr. J. Milton Robb, would be dropped and a vote taken on the two remaining nominees.

The tellers again spread the ballot, and the Secretary announced that 160 delegates had been reported present and 139 votes been cast, of which Dr. Haden received 57 and Dr. Stone 82.

The Speaker declared that the House of Delegates had elected Dr. Harvey B. Stone, Baltimore, as a member of the Council on Medical Education and Hospitals, for a term of seven years, ending in 1948.

Dr. Fred W. Rankin, newly elected President-Elect, tendered his resignation as a member of the Council on Medical Education and Hospitals, and Dr. Arthur W. Booth, Chairman of the Board of Trustees, presented the following nominations for membership on that Council to take the place of Dr. Rankin, resigned, for a term ending in 1943: Dr. D. C. Elkin, Atlanta, Ga.; Dr. Russell L. Haden, Cleveland, and Dr. J. Milton Robb, Detroit.

The tellers spread the ballot, and the Secretary announced that 160 delegates had been recorded present and that 138 votes had been cast of which Dr. Elkin received 13, Dr. Haden 107 and Dr. Robb 18.

The Speaker declared that Dr. Russell L. Haden, Cleveland, had been elected a member of the Council on Medical Education and Hospitals to fill the unexpired term of Dr. Fred W. Rankin, resigned, ending in 1943.

Election of Affiliate and Associate Fellows

The Secretary presented the following nominations for Affiliate and Associate Fellowship, which, on motions duly seconded and carried, were confirmed by the House:

NOMINATIONS FOR AFFILIATE FELLOWSHIP APPROVED BY THE COUNCIL ON SCIENTIFIC ASSEMBLY

Aultz, L. L., Omar, W. Va.
Bates, W. A., Aberdeen, S. D.
Beil, John W., Kansas City, Mo.
Bell, George H., New York.
Bertling, A. E., Wilmette, Ill.
Brown, Samuel Skinner, New York.
Brown, W. L., El Paso, Texas.
Burdick, Gordon G., Chicago.
Burkhardt, Edward A., Kansas City, Mo.
Caton, William P., Alexandria, Va.
Chetwood, Charles H., New York.
Clifford, Joseph W., Worthington, Ind.
Cohen, Martin, New York.
Cox, Allen E., Helena, Mont.
Cranston, William J., Rockport, N. Y.
Curry, Stanton, Peekskill, N. Y.
Dailey, W. G., Millersburg, Ky.
De Forest, Henry P., New York.
Dicus, George A., Streator, Ill.
Drummey, N. D., Boston.
Ellis, Edward F., Fayetteville, Ark.
Fischer, Hermann, New York.
Forbes, Henry H., New York.
Frontz, H. C., Huntingdon, Pa.
Funk, Z. E., Santa Rosa, N. M.
Gilliam, James C., Des Arc, Ark.
Goetchius, H. DuBois, New York.
Gray, Hugh B., Potter Place, N. H.
Grim, Ezra C., Kirksville, Mo.
Hargrave, F. C., Pasadena, Calif.
Hayd, H. E., Buffalo.
Hendon, G. A., Louisville, Ky.
Hitzel, Gustav A., Buffalo.
Hoge, M. W., St. Louis.
Hollister, W. L., Corpus Christi, Texas.
Holmes, Rudolph W., University, Va.
Homer, Harry L., Riderwood, Md.
Hopkins, Samuel W., Walnut, Ill.
Houston, William H., Baltimore.
Jacobsohn, William, New York.
Jefferies, James L., Spartanburg, S. C.
Jelliffe, Smith Ely, New York.
Jobse, William, Milwaukee.
Kalayjian, D. S., Parker, S. D.
Knowlton, Charles D., Rockport, Mass.
Leonhardt, Heinrich, North Tonawanda, N. Y.
Looze, J. J., Wisconsin Rapids, Wis.
Malcolm, P. E. D., New York.
McEwen, Mary G., Evanston, Ill.
Mobley, J. C., Elizabethtown, Ky.
Nichols, Charles B., Auxvasse, Mo.
Norwood, M. L., Lockesburg, Ark.
Onstott, Elmer, Saltsburg, Pa.
Parker, Truman A., La Jolla, Calif.
Parrish, John W., Brooklyn.
Pedersen, James, New York.
Pedersen, Victor C., New York.
Pierpont, J. Harris, Pensacola, Fla.
Pittam, J. Thomas, Kansas City, Mo.
Reiche, Cecilia, Los Angeles.
Ruggles, E. Wood, Rochester, N. Y.
Russwurm, W. C., Helena, Mont.
Schoolfield, G. Clarence, Charleston, W. Va.
Schwab, Leslie W., Chicago.
Sheehy, John J., Garrison, N. Y.
Skaggs, P. T., Miami, Fla.
Staunton, Florence I., Peekskill, N. Y.
Stewart, James L., Spearfish, S. D.
Stewart, William H., New York.
Strang, W. W., New York.
Tedford, R. H., Albany, N. Y.
Theobald, Carl, New York.
Virden, John E., New York.
Walsh, J. H., Campbell, N. Y.
Walton, T. E., Danville, Ill.
Warbasse, James P., Woods Hole, Mass.
Westman, Carl, Chicago.
Wiener, Meyer, St. Louis.
Wolff, Julius, New York.

NOMINATIONS OF AMERICAN MEDICAL MISSIONARIES FOR ASSOCIATE FELLOWSHIP APPROVED BY THE JUDICIAL COUNCIL

Adams, Evelyn A., Cameroun, West Africa.
Burchard, Mary A., Brindaban, United Province, India.
Foster, L. Paul, Musonia, East Africa.
Gieser, P. Kenneth, Chin Kiang, Kiangsu, China.
Hoffman, Rolla E., Meshed, Iran.
Seamans, Clifford M., French Concession, Tientsin, North China.

NOMINATIONS FOR ASSOCIATE FELLOWSHIPS APPROVED BY THE SECTIONS INDICATED

LARYNGOLOGY, OTOLOGY AND RHINOLOGY

Krashen, Avery S., Chicago.

PHARMACOLOGY AND THERAPEUTICS

Abreu, Benedict E., Oklahoma City.
Anderson, Hamilton H., Peiping, China.
Grollman, Arthur, Baltimore.
Larson, Edward, Philadelphia.
Ligon, Edgar William Jr., Washington, D. C.
Mudd, Stuart, Haverford, Pa.
Pfeiffer, Carl, Detroit, Mich.
Smith, Austin E., Chicago.

PATHOLOGY AND PHYSIOLOGY

Huber, John Franklin, Philadelphia.

PREVENTIVE AND INDUSTRIAL MEDICINE AND PUBLIC HEALTH

Gebhard, Bruno, Cleveland.

RADIOLOGY

Cahal, Mac F., Chicago.

Place of 1944 Annual Session

Dr. Arthur W. Booth, Chairman, Board of Trustees, presented the following report:

Because of largely increased attendance at annual sessions of the Association, it is becoming increasingly difficult to select for a place of meeting any city which will provide altogether adequate and satisfactory facilities for scientific meetings and exhibits and at the same time provide adequate hotel accommodations.

Invitations for the 1944 session of the Association have been received from Atlantic City, New York, Philadelphia and St. Louis (the names are mentioned in alphabetical order).

Atlantic City has adequate hotel facilities and adequate accommodations for exhibits and meeting places in the same building.

New York has altogether adequate hotel facilities, but it does not have a satisfactory building for exhibits and for scientific meetings; all of the latter would have to be held in buildings other than the Auditorium.

Philadelphia has relatively limited hotel capacity, and the auditorium is rather remotely located.

St. Louis has an auditorium which is satisfactory for exhibit purposes but inadequate for section meetings. Several sections would have to be housed elsewhere.

Dr. Robert E. Schlueter, Missouri, presented an invitation from the St. Louis Medical Society and the people of St. Louis to meet in St. Louis in 1944. The nomination was seconded by Drs. James Q. Graves, Louisiana; Burt R. Shurly, Section on Laryngology, Otology and Rhinology, and others.

Dr. Andrew F. McBride, New Jersey, withdrew the invitation for the Association to meet in Atlantic City in 1944 but extended it for 1945.

Dr. Charles Gordon Heyd, Past President, invited the Association to meet in New York City in 1944.

Dr. Walter F. Donaldson, Pennsylvania, invited the Association to meet in Philadelphia in 1944.

The Secretary announced that mayors, governors, members of civic bodies of all kinds and especially members of the medical schools in the various cities that have been nominated for the place of meeting in 1944 have supported the invitations received from the medical societies in the cities extending invitations.

On request of the Speaker, the tellers spread the ballot, and the Secretary announced that 160 delegates had been recorded present and that 134 votes had been cast, of which 17 votes had been cast for New York, 23 for Philadelphia, 93 for St. Louis and 1 for Atlantic City.

The Speaker declared that the House of Delegates had selected St. Louis in which to hold the 1944 annual session of the American Medical Association.

UNFINISHED BUSINESS

Resolutions from Section on Dermatology and Syphilology Dealing with Medical Preparedness

Dr. Clyde L. Cummer, Section on Dermatology and Syphilology, presented resolutions dealing with medical preparedness, which, as amended, read as follows:

The Section on Dermatology and Syphilology unanimously adopted resolutions, with the recommendation that they be laid before the Committee on Medical Preparedness of the American

Medical Association for appropriate action, the purpose of them being to insure the best medical care for the personnel of the Army and Navy, and also to insure the most effective use of civilian physicians, particularly specialists, who are or may be called to duty with the armed forces. These resolutions as amended by the House read:

Resolved, That separate services for the specialties recognized by the American Medical Association and by the national boards for the medical specialties should be organized and maintained in the Medical Corps of the Army and Navy; and

Resolved, That in all military and naval hospitals of sufficient size and permanence to warrant special departments, adequate physical facilities, equipment and personnel be made available for the proper practice of each specialty indicated; and

Resolved, That the national boards for the various specialties be asked to study the facilities to be made available in military and naval hospitals, with the view of giving credit to junior medical officers for the time spent in these departments.

The Section on Dermatology and Syphilology is further of the opinion that the adoption of these suggestions will be of significant influence in the following directions: 1. It will tend to integrate military and civilian medicine and to reduce the disruption caused by differing divisions of specialization in these two fields. 2. It will prove an effective means of attracting to military service young physicians who wish to qualify as specialists, as they will have opportunities for gaining experience which will be recognized by the American boards of special certification. 3. With particular regard to the specialty of dermatology and syphilology, it will tend to improve the methods of prevention and treatment of skin diseases and syphilis, not only in the large military and naval hospitals but throughout the services.

It is hoped that the resolutions passed by this section will have the support of the other sections of the American Medical Association and that prompt action will be taken on these resolutions by the House of Delegates and by the Committee on Medical Preparedness.

The resolutions as amended were referred to the Committee on Medical Preparedness with power to act with approval of the Board of Trustees after conference with the Surgeon Generals of the Army and Navy, on motion of Dr. Arthur T. McCormack, Kentucky, seconded by Dr. Cummer, and carried after discussion.

Expressions of Appreciation

Dr. Arthur T. McCormack, Kentucky, moved that the House of Delegates extend its deep appreciation to the Ohio State Medical Association, including the Academy of Medicine of Cleveland, to the president of the Ohio State Medical Association and the president of the Academy, to Governor Bricker and to Mayor Blythin, and especially to the Chairman of the Local Committee on Arrangements, Dr. Cummer, his associates and the ladies associated with them in the beautiful arrangements they have made, to the press and to the entire citizenship of Cleveland, because of receiving from every one a welcome that will always be remembered. The motion was seconded by Dr. J. Newton Hunsberger, Pennsylvania, and Dr. William Weston, Section on Pediatrics, after which Dr. Arthur J. Bedell, Section on Ophthalmology, moved that the House express that appreciation by a rising vote. The motion was carried unanimously by a rising vote.

The Vice Speaker took the chair, and Dr. Arthur T. McCormack, Kentucky, moved that the gratitude of the House be extended to the Speaker, and that affection, love and confidence be extended to the retiring President, Dr. Nathan B. Van Etten, with the hope that his future contributions to medicine and to human life, his welfare and his happiness will continue for many, many years. The motion was seconded and carried by a rising vote.

The Speaker resumed the chair and stated that a motion to adjourn was in order.

On motion of Dr. William H. Myers, Georgia, duly seconded and carried, the House adjourned sine die at 4:20 p. m.

THE SCIENTIFIC EXHIBIT

The Scientific Exhibit at the Cleveland session was notable for its attractiveness and for the excellent demonstrations by all who participated. New booth equipment was used throughout, including fluorescent lighting.

There were one hundred and seventy-one exhibits, one hundred and fifty-nine of which were presented under the auspices of the various sections and ten on national defense and war medicine. There were two special exhibits subsidized by the Board of Trustees and one hundred and five motion pictures, which were shown in six areas adjoining the exhibits.

The Special Exhibit on Fractures was presented for the eleventh time under the auspices of a committee composed of Dr. Kellogg Speed, Chicago, chairman; Dr. Frank D. Dickson, Kansas City, Mo., and Dr. Walter Estell Lee, Philadelphia. Dr. Carl H. Lenhart, Cleveland, served as local representative. Nearly fifty physicians assisted with the demonstrations in six booths continuously throughout the week, and a pamphlet describing the exhibit was distributed.

The Special Exhibit on Lame Backs was presented for the second time under the auspices of a committee composed of Dr. Frank R. Ober, Boston, chairman; Dr. Carl E. Badgley, Ann Arbor, Mich.; Dr. J. Archer O'Reilly, St. Louis; Dr. Arthur Steindler, Iowa City, and Dr. Philip D. Wilson, New York, with the collaboration of Dr. Eben J. Carey, Milwaukee; Dr. Albert Ferguson, Brookline, Mass.; Dr. Theodore Willis, Cleveland, and Dr. Walter J. Zeiter, Cleveland. A group of fifty physicians participated throughout the week in the demonstrations, and a pamphlet describing the exhibit was distributed.

The group of exhibits on national defense and war medicine emphasized some of the factors paramount in the present emergency. Three large exhibits on the desiccation of human blood plasma received special certificates of merit. Another exhibit on aviation medicine received a bronze medal. There were six motion pictures dealing with the various phases of national defense and war medicine shown in an area adjoining the exhibits.

The Section on Practice of Medicine presented twenty-six exhibits, including a large group on heart disease and several historical exhibits. Four exhibits received certificates of merit and four received honorable mention. Dr. Louis B. LaPlace, Philadelphia, was the section representative.

The Section on Surgery, General and Abdominal, presented twenty-six exhibits, including a group on the subject of burns and a group on cancer. To this section were awarded a gold medal, a silver medal, a bronze medal, a certificate of merit and an honorable mention. Among the motion pictures dealing with surgery were seventeen on general surgery, fourteen on the surgical aspects of cancer, nine on plastic surgery and eleven on surgical anatomy. The section representative was Dr. Grover C. Penberthy, Detroit.

The Section on Obstetrics and Gynecology presented eleven exhibits, one of which received a certificate of merit. There were five motion pictures. The section representative was Dr. H. Close Hesseltine, Chicago.

The Section on Ophthalmology had seven exhibits, one of which received a certificate of merit and one an honorable mention. There were one motion picture and one lantern slide demonstration on the subject of ophthalmology. The committee from the section consisted of Dr. Georgiana Dvorak Theobald, Oak Park, Ill., chairman; Dr. Derrick Vail, Cincinnati, and Dr. John E. L. Keyes, Youngstown, Ohio.

The Section on Laryngology, Otology and Rhinology presented five exhibits, two of which received honorable mention. There were two motion pictures. The section representative was Dr. Fred W. Dixon, Cleveland.

The Section on Pediatrics had eight exhibits, among which were three on the control of air borne infection which received special mention. The section representative was Dr. Arthur F. Abt, Chicago.

The Section on Pharmacology and Therapeutics presented six exhibits, two of which received honorable mention. The section representative was Dr. O. P. J. Falk, St. Louis.

The Section on Pathology and Physiology had fourteen exhibits. The section representative was Dr. Frank W. Konzelmann, Philadelphia.

The Section on Nervous and Mental Diseases showed six exhibits and six motion pictures. The section representative was Dr. Frederick P. Moersch, Rochester, Minn.

The Section on Dermatology and Syphilology showed seven exhibits, one of which received a silver medal and three of which received certificates of merit. There were six motion pictures and a lantern slide demonstration. The representative was Dr. Hamilton Montgomery, Rochester, Minn.

The Section on Preventive and Industrial Medicine and Public Health presented twelve exhibits, two of which received certificates of merit. Three motion pictures were shown. The representative to the section was Dr. Paul A. Davis, Akron, Ohio.

The Section on Urology presented six exhibits, one of which received a certificate of merit and one honorable mention. There were twelve motion pictures. The section representative was Dr. John H. Morrissey, New York.

The Section on Orthopedic Surgery had six exhibits, one of which received a certificate of merit. There were three motion pictures. The section representative was Dr. Theodore A. Willis, Cleveland.

The Section on Gastro-Enterology and Proctology had six exhibits, one of which received a gold medal. There were two motion pictures. Dr. Sara M. Jordan, Boston, was the section representative.

The Section on Radiology presented five exhibits, one of which received a certificate of merit. The section representative was Dr. S. W. Donaldson, Ann Arbor, Mich.

The Section on Anesthesiology presented eight exhibits, one of which received honorable mention. There was one motion picture. The section representative was Dr. Paul M. Wood, New York.

Thirty-four papers read before the sections of the Scientific Assembly were correlated with the exhibits in the Scientific Exhibit.

Appreciation is expressed to Western Reserve University Medical School for the students who assisted in the demonstrations on fractures and lame backs and in the motion picture theaters.

Acknowledgment is likewise made to the many Cleveland physicians for their numerous courtesies and to the local committee on Scientific Exhibit, of which Dr. Robert M. Stecher was chairman.

REPORT OF THE COMMITTEE ON AWARDS

The Committee on Awards made the following report:

GROUP I

(Awards in Group I are made for exhibits of individual investigation, which are judged on the basis of originality and excellence of presentation.)

The GOLD MEDAL to Alvin L. Berman, F. S. Grodins and A. C. Ivy, Northwestern University Medical School, Chicago, for exhibit on the rationale of bile salt therapy.

The SILVER MEDAL to Harold Thomas Hyman, William Leifer and Louis Chargin, Mount Sinai Hospital, New York, for exhibit illustrating massive dose chemotherapy of early syphilis by the intravenous drip method.

The BRONZE MEDAL to Walter M. Boothby, W. R. Lovelace, C. W. Mayo and A. H. Bulbulian, Mayo Foundation, Rochester, Minn., for exhibit illustrating physiologic problems in aviation medicine.

CERTIFICATES OF MERIT, Group I, are awarded to the following (alphabetically arranged):

Charles C. Higgins, Cleveland Clinic, Cleveland, for exhibit illustrating renal lithiasis, an experimental and clinical study.

Walter A. Hoyt, Adrian E. Davis and George Van Buren, Akron Children's Hospital, Akron, Ohio, for exhibit on the treatment of acute osteomyelitis by sulfathiazole without operation.

Charles Huggins, George Gomori, C. V. Hodges and W. W. Scott, University of Chicago, Chicago, for exhibit illustrating phosphatases and carcinoma of the prostate gland.

Benjamin S. Kline, Mount Sinai Hospital, Cleveland, for exhibit illustrating new standard antigen (water purified) for the microscopic slide precipitation tests for syphilis.

Phillips Thygeson and W. L. Stone Jr., Institute of Ophthalmology, New York, for exhibit on the epidemiology of inclusion conjunctivitis.

Leandro M. Tocantins, J. F. O'Neill and H. W. Jones, Jefferson Medical College of Philadelphia, Philadelphia, for exhibit on infusions of blood and other fluids into the circulation via the bone marrow.

In addition, the following exhibits are deemed worthy of Honorable Mention (alphabetically arranged):

That of F. Lowell Dunn, University of Nebraska College of Medicine, Omaha, and Walter J. Rahm Jr., New York, on the cathode ray visualization of normal and pathologic chest sounds.

That of Chevalier L. Jackson and John Franklin Huber, Temple University School of Medicine, Philadelphia, on applied anatomy of the tracheobronchial tree.

That of Louis N. Katz, Raymond S. Megibow, Franz S. Steinitz, Milton Mendlowitz and Maurice Sokolow, Michael Reese Hospital, Chicago, illustrating observations on pulmonary embolism.

That of H. G. Kobrak, J. R. Lindsay and H. B. Perlman, University of Chicago, Chicago, on the conduction of sound in the ear.

That of E. Perry McCullagh, E. J. Ryan and D. Roy McCullagh, Cleveland Clinic, Cleveland, on male sex hormones—some physiologic and clinical observations.

That of Thomas H. Seldon and John S. Lundy, Institute of Experimental Medicine, Mayo Foundation and Section on Anesthesia, Mayo Clinic, Rochester, Minn., on effect of certain general anesthetic agents on the small vessels of the rabbit's ear.

GROUP II

(Awards in Group II are made for exhibits which do not exemplify purely experimental studies and which are judged on the basis of excellence of presentation and correlation of facts.)

The GOLD MEDAL to Waltman Walters, Howard K. Gray and James T. Priestley, Mayo Clinic, Rochester, Minn., for exhibit illustrating malignant lesions of the stomach; importance of early treatment and results.

The SILVER MEDAL to Grover C. Penberthy and Charles N. Weller, Children's Hospital of Michigan, Wayne University College of Medicine, Detroit, for exhibit illustrating the treatment of burns.

The BRONZE MEDAL to G. V. Brindley, Scott and White Hospital, Temple, Texas, for exhibit illustrating carcinoma of the colon; factors affecting its cure.

CERTIFICATES OF MERIT, Group II, are awarded to the following (alphabetically arranged):

David C. Elliott, Chicago; George Baehr, New York; Loren Shaffer, Detroit; Glenn S. Usher and S. Allan Lough, Washington, D. C., U. S. Public Health Service, for exhibit on syphilis—massive dose therapy.

Henry N. Harkins, Henry Ford Hospital, Detroit, exhibit illustrating the treatment of burn shock.

Robert A. Kehoe, University of Cincinnati College of Medicine, Cincinnati, for exhibit on lead poisoning.

John T. Murphy and C. E. Hufford, Toledo, Ohio, for exhibit on bone tumors.

I. C. Rubin, Mount Sinai Hospital, New York, for exhibit illustrating diagnosis of impaired tubal function by kymographic uterotubal insufflation and soluble viscous contrast medium.

E. R. Sayers and H. H. Schrenk, United States Bureau of Mines, Washington, D. C., for exhibit on respiratory protective equipment in mining and industrial work.

In addition, the following exhibits are deemed worthy of Honorable Mention (alphabetically arranged):

That of K. K. Chen and G. H. A. Clowes, the Lilly Research Laboratories, Indianapolis, on variations of drug action.

That of Alfred E. Cohn, Hospital of the Rockefeller Institute for Medical Research, New York, on some aspects of the natural history of rheumatic heart disease.

That of Robert M. Daley, Richard Gubner and Harry E. Ungerleider, Equitable Life Assurance Society, New York, on the clinical evaluation of heart size measurements.

That of W. D. Gatch and J. S. Battersby, Indiana University Medical Center, Indianapolis, on effect of bowel distention on plasma volume.

That of W. Ray Jones, King County Hospital System, Seattle, on microslide diagnosis of atypical gonorrhea.

That of Albert D. Ruedemann, Cleveland Clinic, Cleveland, on exophthalmos.

SPECIAL CERTIFICATES OF MERIT

Special Certificates of Merit are awarded to the following historical exhibits (alphabetically arranged):

Paul E. Bechet, New York Post-Graduate Medical School and Hospital, New York, for exhibit on early American dermatologists.

Howard Dittrick, Cleveland Medical Library, Cleveland, for exhibit showing objects relating to blood letting, cupping transfusion, blood pressure and blood examination.

Russell L. Haden and Joseph Lucas, Cleveland Clinic, Cleveland, for exhibit on origin and early history of the microscope.

Nolie Mumey, Denver, for exhibit on primitive medicine.

Special Certificates of Merit are awarded to the following for the development of a method for the desiccation of human blood plasma (alphabetically arranged):

Samuel B. Harper and A. E. Osterberg, Mayo Clinic, Rochester, Minn.

Frank W. Hartman, Henry Ford Hospital, Detroit.

Joseph M. Hill, E. E. Muirhead, C. E. Ashworth and Louis Waters, Baylor University Hospital, Dallas, Texas.

SPECIAL COMMENDATION

Special commendation is given to the exhibits on the control of air borne infection.

SUBSIDIZED EXHIBITS

The Committee on Awards commends highly the special exhibits on fractures and lame backs sponsored by the American Medical Association, and the exhibit on nutritionally improved flour presented by members of the Council on Foods and Nutrition of the American Medical Association.

COMMENTS AND RECOMMENDATIONS

The innovation of providing six small theaters for the projection of silent and sound motion pictures introduces a feature of the Scientific Exhibit which will undoubtedly grow in interest and in importance. The transfer of motion pictures from the exhibit booths to the theaters has many obvious advantages. It is now quite apparent that motion pictures, particularly those in natural color, provide a teaching medium of increasing importance. It is the recommendation of the Committee on Awards that adequate space and facilities be provided at the forthcoming Atlantic City meeting for continuation and possible extension of this new feature of the Scientific Exhibit.

The Committee commends highly the plan of coordinating, as far as possible, the exhibits with papers read by exhibitors before the section meetings. The representatives to the Scientific Exhibit from the sixteen sections have rendered yeoman service to the Committee on Scientific Exhibit and to the Director of the Scientific Exhibit in encouraging the presentation of exhibit material of exceptional merit. Because of the general excellence of the exhibits, only the limitation of the number of awards available prevented official recognition of many exhibits of undoubted merit.

The Committee on Awards recommends to the Board of Trustees that certain of the exhibits which are of a character which would permit their utilization as traveling exhibits for loan to state or sectional medical societies be acquired for that purpose.

The Committee is deeply impressed with the spirit of cooperation existing between the Committee on Scientific Exhibit of the Board of Trustees, the Advisory Committee to the Scientific Exhibit, the section representatives and the Director of the Scientific Exhibit. This report would fail in its mission if it did not give particular recognition to the ability and tactfulness of Dr. Thomas G. Hull, Director of the Scientific Exhibit, in making the Scientific Exhibit the outstanding feature of the annual session of the American Medical Association.

WALTER M. SIMPSON, Dayton, Ohio, Chairman.
HAROLD S. DIEHL, Minneapolis.
HARRY S. GRADLE, Chicago.
WILLIAM P. HERBST, Washington, D. C.
MAX M. PEET, Ann Arbor, Mich.

MEDICAL LEGISLATION

MEDICAL BILLS IN CONGRESS

Changes in Status.—H. R. 3864 has been reported to the House, proposing to amend an act to provide for the registry of pursers and surgeons as staff officers on vessels of the United States. Under existing law, senior registered surgeons and other surgeons, if any, and their assistants or aides are placed under the charge of the senior registered purser. The pending bill proposes to set up a separate medical division of the staff department, to be under the charge of the senior registered surgeon of the vessel, who will be responsible solely to the master of the vessel. S. 1524 has passed the Senate, authorizing the President to provide for the deferment from training and service under the Selective Training and Service Act of men who are 28 years old or over. H. R. 4545 has passed the House and Senate, providing for the acquisition and equipment of public works made necessary by the defense program, including the acquisition and equipment of hospitals.

Bills Introduced.—H. R. 5045, introduced by Representative Mott, Oregon, proposes to authorize pensions to all persons who served ninety days in foreign service under the jurisdiction of the Quartermaster General, Surgeon General of the United States Army, the Secretary of the Navy, or Marine Corps, during the Spanish-American War, including the Philippine Insurrection and the Chinese Boxer Rebellion. H. R. 4882, introduced by Representative Healey, Massachusetts, proposes, among other things, to extend the coverage of the Social Security Act with respect to old age and survivors' insurance benefits to employees of corporations, community chests, funds or foundations organized and operated exclusively for charitable, religious, scientific, literary or educational purposes, for the prevention of cruelty to children or animals and for religious purposes, excluding duly ordained or commissioned or licensed ministers of any church in the regular exercise of their ministry and excluding services performed by regular members of religious orders in the exercise of duties required by such orders.

STATE MEDICAL LEGISLATION

Texas

Bill Enacted.—H. 620 was approved by the governor, June 10, authorizing the board of regents of the University of Texas to maintain a hospital and to collect a compulsory group hospitalization fee of not to exceed $4 for any one semester or for any one summer session from each student as a prerequisite to registration in the university.

Pennsylvania

Bill Introduced.—S. 1172 proposes to appropriate $100,000 to the department of health to equip and operate a sanatorium in Butler County for the treatment of cancer and for cancer research.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

ARKANSAS

Annual Registration Due July 1.—All licentiates of the State Medical Board of the Arkansas Medical Society are required by law to register this year with the board on or before July 1 and at that time to pay the required fee, which is $2 for residents and $4 for nonresidents. After this year the required date for registration will be January 1 and the fee required will be such fee as may be set by the board not less than sixty days in advance of January 1. If a licentiate fails to pay the required annual fee before March 1 of any year, his license to practice automatically expires but may be reinstated on the payment of all delinquent fees and a penalty of $1 for each year, or part thereof, of delinquency.

IDAHO

Annual Registration Due July 1.—All practitioners of medicine and surgery holding licenses to practice in Idaho are required by law to register annually on July 1 with the Department of Law Enforcement and at that time to pay a fee of $2. If a licentiate has not paid the annual registration fee by October 1, his license can be canceled but will be restored within five years thereafter on payment of the delinquent fees and a $10 penalty. If a license has been canceled for more than five years, it can be reinstated only on the payment of $25 and on the licentiate's passing an examination, the nature of which shall be determined by the Department of Law Enforcement.

ILLINOIS

Personal.—Dr. Roger W. DeBusk, assistant director of St. Luke's Hospital, New York, has been appointed superintendent of Evanston Hospital, succeeding Miss Ada Belle McCleery, who retired May 1 after holding the position since 1921.—— Dr. Cecil A. Z. Sharp has resigned as superintendent of the Macomb health district to enter private practice in Trenton.

Fifty Years of Medicine.—Dr. William O. Tuck, Plymouth, recently completed fifty years in the practice of medicine.——Dr. Thomas J. Hilliard, Fairfield, observed his fiftieth anniversary as a physician on April 20. He has been practicing in Fairfield since 1906. —— Dr. and Mrs. Edward A. Elfeld, Arlington Heights, were guests of honor at a dinner, recently, marking the physician's completion of fifty years in the practice of medicine, thirty-nine of which were spent in Arlington Heights.

Chicago

Society News. — The Chicago Gynecological Society was addressed, April 18, by Drs. Edward A. Schumann, Philadelphia, on "An Evaluation of the Several Types of Cesarean Section and Their Indications" and Walter W. Coen, "Indications for the Schumann Type of Cesarean Section."——The Chicago Orthopedic Society was addressed, May 9, by Drs. John Albert Key, St. Louis, on "Use of Sulfanilamide and Sulfathiazole in Clean and Infected Operative Wounds" and Cly Howard Hatcher, "Solitary Eosinophilic Granuloma of Bone."——At the annual meeting of the Chicago Pathological Society on May 12 Drs. Karl A. Meyer and Alex B. Ragins discussed "Carcinoma of the Parathyroid."

Dr. Geiling Receives Mendel Medal.—Dr. Eugene M. K. Geiling, since 1936 professor and chairman of the department of pharmacology, University of Chicago, The School of Medicine, was presented with the Mendel Medal by Villanova College, Villanova, Pa., "for his contributions to the knowledge of the pituitary gland, its relation to other glands and for his assistance in the crystallization of insulin." The medal is "given annually for outstanding achievement in science." Dr. Geiling was born in Orange Free State, South Africa, in 1891 and graduated at Johns Hopkins University School of Medicine, Baltimore, in 1923. He has served on the faculties of the College of Agriculture, South Africa, 1917-1918; College of Medicine, University of Capetown, 1918-1919; Johns Hopkins, 1921-1935, and, in 1936, joined the University of Chicago. He is president of the American Society for Pharmacology and Experimental Therapeutics.

IOWA

State Medical Election—Coordinator Named for President.—Dr. Frank P. Winkler, Sibley, was chosen president-elect of the Iowa State Medical Society at its annual meeting in Davenport, May 16, and Dr. Earl B. Bush, Ames, was installed as president. Dr. Joseph B. Priestley, Des Moines, was named general coordinator to have charge of such functions as the new president will be unable to manage because of his army duties. Dr. Bush is a colonel in the National Guard on active duty with the army as chief surgeon at Camp Claiborne, La. Other officers elected include Drs. James C. Hill, Newton, and George C. Albright, Iowa City, vice presidents.

District Medical Meeting.—The Iowa and Illinois Central District Medical Association will hold its annual meeting at the Outing Club in Davenport, June 26. The speakers will include:

Dr. John A. Toomey, Cleveland, Pathogenesis of Poliomyelitis.
Dr. Howard K. Gray, Rochester, Minn., Cancer of the Stomach.
Dr. Otto H. Schwarz, St. Louis, Hyperplasia of the Endometrium.

At the banquet in the evening, medals will be presented to Drs. Edward F. Strohbehn, Davenport, and Thomas F. Beveridge, Muscatine, who have completed fifty years of practice. Dr. Morris Fishbein, Editor of THE JOURNAL, Chicago, will speak on "American Medicine Prepares."

KENTUCKY

Dr. Rankin Appointed to University Staff.—Dr. Fred W. Rankin, Lexington, President-Elect of the American Medical Association, has been appointed clinical professor of surgery at the University of Louisville School of Medicine, effective July 1.

LOUISIANA

Society News. — A joint meeting of the Orleans Parish Medical Society with the New Orleans Gynecological and Obstetrical Society, May 16, was designated the "Dr. Ernest S. Lewis Memorial Meeting." The speakers were Drs. Hiram W. Kostmayer, New Orleans, on "The Life of Dr. Maurice J. Gelpi" and Jacob P. Greenhill, Chicago, "The Practical Aspects of Gynecologic Endocrinology."

Personal.—Dr. Robert S. Teague Jr., instructor in pharmacology, Tulane University of Louisiana School of Medicine, New Orleans, recently was awarded the Lewis Cass Ledyard Jr. Fellowship for medical research, according to an announcement from the joint administrative board of the New York Hospital and Cornell University Medical College, New York. The award, providing $4,000, is made annually to a young physician or surgeon demonstrating fitness to carry on original research of high order. Dr. Teague will engage in research on chemical substitutes for female sex hormones, newspapers reported. Dr. Teague graduated at the Department of Medicine, University of Chicago, in 1937.——Dr. William W. Leake, New Orleans, formerly superintendent of Charity Hospital, was appointed chief surgeon of the Illinois Central System, with offices in Chicago, effective May 1. He succeeds Dr. Guy G. Dowdall, Chicago, who retired on account of his health.

MASSACHUSETTS

State Medical Election.—Dr. George L. Schadt, Springfield, was chosen president-elect of the Massachusetts Medical Society at its annual meeting recently and Dr. Frank R. Ober, Boston, was inducted as president. Other officers are Drs. Edward P. Bagg, Holyoke, vice president; Michael A. Tighe, Lowell, secretary, and Charles S. Butler, Boston, treasurer.

Dr. Gordon Injured in England.—Dr. John E. Gordon, professor of preventive medicine and epidemiology, Harvard Medical School, Boston, who is now acting as liaison officer between the British Ministry of Health and the United States and director of the American Red Cross-Harvard University Hospital Unit in England, and the chief physician of the unit, Dr. Paul B. Beeson, resident physician of the Peter Bent Brigham Hospital and assistant in medicine, Harvard Medical School, Boston, were injured in a raid when Dr. Gordon's apartment was bombed. Dr. Gordon, writing to the British Ministry of Health, said: "Within a few minutes (after the explosion) one of your first aid workers, a young lady, popped in off the street, put a towel over my bleeding head, and with my colleague Dr. Beeson proceeded with us to the nearest first aid post. She deposited us with the nurse in charge there, said

a curt good night, and I have not seen her since. She just went about her business. At the first aid post we had the finest attention from four or five nurses and first aid workers. A young doctor arrived promptly and made a few minor repairs that were indicated. We were then put to bed at the first aid post between warm blankets, packed with hot water bottles and given a steaming cup of hot tea and a cigaret and within fifteen minutes were as comfortable as could be."

MICHIGAN

Hickey Memorial Lecture.—Dr. John T. Murphy, Toledo, Ohio, delivered the 1941 Hickey Memorial Lecture before the Wayne County Medical Society and the Detroit Roentgen Ray and Radium Society, Detroit, April 7. His subject was "The Use of X-Ray in the Treatment of Carcinoma of the Skin."

Annual Concert of Glee Club.—The seventh annual concert of the Glee Club of the Wayne County Medical Society was held at the Detroit Institute of Art, April 28. Marcus Kellerman, an honorary member of the society, is director of the Glee Club. Soloists were Drs. Starr L. Kline, tenor, and Leo P. Rennell, baritone, with piano selections by Drs. Reginald Stanley Brain and Henry S. Brown.

Nutrition Defense Committee.—Marie Dye, Ph.D., dean of the division of home economics and professor of foods and nutrition, Michigan State College, East Lansing, has been chosen chairman of the newly formed Michigan Nutrition Defense Committee. Membership in the committee, which held its first meeting April 30, has been drawn from twenty-two public agencies and private organizations, according to *Michigan Public Health*. Similar committees are being established in other states.

Personal.—Dr. Robert L. Novy, professor of clinical medicine, Wayne University College of Medicine, Detroit, has been made a member of the city board of health. He succeeds Dr. Clarence L. Candler, who has completed the unexpired term of the late Dr. William A. Evans.——John A. Galbo, D.D.S., Detroit, has been appointed a member of the Michigan State Council of Health.——Dr. Harry W. Plaggemeyer, Detroit, was recently made an honorary member of the Wisconsin Urological Society.——Dr. Plinn F. Morse, Detroit, was honored at a banquet, May 7, and presented with a gold watch from members of the staff of Harper Hospital. Dr. Eldwin R. Witwer was toastmaster, and speakers included Drs. George A. Kamperman and Lawrence Reynolds. All are from Detroit.

MONTANA

Society News.—Dr. Fred H. Albee, New York, was the principal speaker before the Montana Surgical Guild at its clinical meeting in Great Falls April 25.——Dr. E. Martin Larson, Great Falls, was reelected president of the Montana Tuberculosis Association at its meeting in Helena April 19; he has been president since 1934.——Dr. Marjorie K. Smith, St. Albans, N. Y., has been named assistant director of the maternal and child health division of the Montana State Board of Health.

NEBRASKA

Postgraduate Courses in Obstetrics and Pediatrics.—The University of Nebraska College of Medicine, Omaha, in cooperation with the maternal and child health committee of the Nebraska State Medical Association and the maternal and child health division of the Nebraska State Department of Health presented an extramural postgraduate course in obstetrics and pediatrics in five towns between June 9 and 20, two sessions in each town, one week apart. The instructors were Drs. Willis E. Brown, assistant professor of obstetrics and gynecology, and John L. Gedgoud, assistant professor of pediatrics at the university medical school. The towns visited were Grand Island, Hastings, Kearney, York and Beatrice. In addition, a statewide conference on care of premature infants is being presented with sessions at Norfolk, Alliance, North Platte, McCook, Grand Island, Hastings, Columbus and Beatrice, June 12 through 28. The lecturers are Dr. Albert V. Stoesser, associate professor of pediatrics, University of Minnesota Medical School, Minneapolis, and Miss Gertrude E. Carlsrud, R.N., of the division of child hygiene, Minnesota Department of Health, Minneapolis. This course is presented by the state medical association, the state health department, the Nebraska State Nurses Association and the Nebraska League of Nursing Education.

NEW YORK

Rochester Academy Awards.—The Rochester Academy of Medicine awarded its Albert D. Kaiser Medal "for distinguished service to the medical profession" to Dr. David B. Jewett at its annual meeting, May 6. Dr. Jewett was honored for his efforts in building up the academy's library. Scientific awards of $100 and certificates were presented to Dr. Leonard K. Stalker for research on peptic ulcer and to Dr. William W. Stiles for research on leptospirosis.

Society News.—Dr. Robert S. Goodhart, Forest Hills, addressed the Tompkins County Medical Society, Ithaca, April 15, on "The Relations of Vitamins to Disease."——Dr. James M. Flynn, Rochester, then president of the Medical Society of the State of New York, addressed a joint meeting of the Warren, Washington and Saratoga county medical societies in Glens Falls, April 14, on "Organization in the Practice of Medicine."——Capt. Edwin N. Beery, M. R. C., U. S. Army, Governors Island, addressed the Utica Academy of Medicine and the Utica Dental Society at a joint meeting in Utica, April 17, on "The Medical Profession in a National Emergency."

New York City

Spring Festival.—The Medical Society of the County of Kings held its second spring festival, May 12-17. Tournaments in tennis and bowling were held during the week, there was a hobby show at the New Swedish Hospital and on Saturday May 17 the Doctors' Musical Society of Brooklyn gave its fifth annual concert at the Brooklyn Academy of Medicine.

Hospital News.—The cornerstone for a nine story addition to St. Vincent's Hospital was laid recently. The new building is part of a $1,300,000 project which will bring the capacity of the hospital to 600. It will include also equipment, alterations and transfer of departments. Former Gov. Alfred E. Smith presided at the ceremony and Archbishop Francis J. Spellman laid the stone.——The cornerstone of a new building for Lebanon Hospital was laid April 20 by L. Victor Weil, president of the hospital. It is expected that the new structure, which will have a capacity of 400 beds, will be finished early next year.——A fellowship in ophthalmologic research has been established at Montefiore Hospital in memory of Ernestine Lambert Cohn. Dr. Virginia L. Lubkin, a member of the house staff, is the first holder of the fellowship.

Personal.—Dr. Ralph Irving Lloyd, Brooklyn, was the guest of honor at the annual dinner of the Brooklyn Ophthalmological Society, May 21. Dr. Lloyd, a past president of the Brooklyn society, is president-elect of the American Academy of Ophthalmology and Otolaryngology. Dr. Joseph E. Golding was toastmaster and speakers included Drs. Maurice L. Wieselthier, Maurice J. Dattelbaum, Percy Fridenberg and Algernon B. Reese. The society gave Dr. Lloyd a portable radio. About seventy-five eye physicians attended the dinner.——Dr. Charles Perley Gray was guest of honor at a dinner, May 19, given by the Seventh Regiment Veterans Association on the occasion of his retirement as colonel in the New York National Guard.——Dr. Edmund P. Fowler has been elected president of the New York League for the Hard of Hearing.

Typhoid Outbreak on Spanish Ship.—Three positive cases and three suspected cases of typhoid in New York, one at Ellis Island and two in Boston have been reported among passengers who debarked from the Spanish steamship *Magallanes* on May 24, the New York City Department of Health reported on June 3. The outbreak was discovered when Mount Sinai Hospital reported on May 28 that one passenger from the ship had arrived there with the disease. This patient later died. Investigation of the one hundred and sixty-one other passengers disclosed the other cases. The ship, which originally sailed from Bilbao, Spain, with three hundred and twenty-six passengers and a crew of one hundred and ninety-six, left New York on its return trip May 27, before the typhoid was discovered, and at the time of the report on June 2 nothing had been heard of it.

OKLAHOMA

Society News.—Dr. Albert R. Hatcher, Wellington, Kan., addressed the Garfield County Medical Society, Enid, April 24, on "Malignancies of the Breast."——Dr. Arthur Graham Asher, Kansas City, Mo., addressed the Tulsa County Medical Society, Tulsa, May 26, on "Chemical, Nutritional and Clinical Factors Influencing the Administration of Digitalis."——Drs. John H. Lamb, Oklahoma City, and Horton E. Hughes, Shawnee, addressed the Pottawatomie County Medical Society in Shawnee, May 17, on "Photography in Medicine."

PENNSYLVANIA

District Meetings.—The Eighth Councilor District of the Medical Society of the State of Pennsylvania held its annual meeting, June 19, on board the S. S. *South American*, sailing from Erie. The speakers included Lieut. Col. Edgar S. Everhart, medical officer in the National Guard on duty with the U. S. Army, state medical director of selective service, on "The Doctor and the Selective Service"; Dr. Daniel L. Borden, Washington, D. C., "The American Medical Association on Trial," and Francis F. Borzell, Philadelphia, president of the state medical society. The Woman's Auxiliary held its annual meeting at the same time.——The Third and Twelfth councilor districts held a joint meeting at Scranton, June 17. Speakers on the scientific program were Drs. Herbert B. Gibby, Wilkes-Barre, on "Use of Lyophilized Plasma in Peritonitis"; Harrison F. Flippin, Philadelphia, "Use and Abuse of Sulfonamides in General Practice," and Frank W. Konzelmann, Philadelphia, "The Laboratory Situation in Pennsylvania." After luncheon Drs. Francis F. Borzell, Philadelphia, president, and Lewis T. Buckman, Wilkes-Barre, president-elect of the state society, made addresses. The woman's auxiliaries of the two districts also held a joint meeting.

Philadelphia

New Officials of Woman's College.—Dr. Ellen C. Potter, director of medicine in the department of institutions and agencies of the state of New Jersey, has been made acting president of the Woman's Medical College of Pennsylvania to succeed Dr. Chevalier Jackson, who resigned after serving since 1935. At the same time Dr. Margaret D. Craighill, who has been acting dean since Sept. 15, 1940, was appointed dean. Dr. Potter graduated from the Woman's Medical College in 1903 and was a member of the faculty for many years in the department of gynecology. In 1920 she was appointed chief of the child health division of the state health department of Pennsylvania; in 1922, director of child welfare. From 1923 to 1927 she was state secretary of welfare, going to New Jersey in the latter year.

WASHINGTON

Annual Registration Due July 1.—All practitioners of medicine and surgery holding licenses to practice in Washington are required by law to register annually on or before July 1, with the director of licenses, and at that time to pay a fee of $5, thereby renewing their licenses for one year. Failure on the part of a licentiate timely to register and pay the required fee renders his license to practice invalid but his license may be reinstated on written application to the director and on payment of the delinquent fees and a penalty of $10.

Society News.—Dr. Joseph Irving Tuell, Seattle, addressed the King County Medical Society, Seattle, May 9, on "Fractures of the Humerus Involving the Elbow Joint" and Drs. Kenneth K. Sherwood, Seattle, John W. Skinner, Kirkland, and Anette Bocker, A.B., on "Urinary Excretions of Thiamine in Clinical Cases."——Dr. James F. Blackman, Seattle, addressed the Pierce County Medical Society, Tacoma, May 13 on "Management of Crushing Injuries to the Thorax."——The Tacoma Surgical Club held its annual meeting May 3 with Dr. Harry E. Mock, Chicago, as the guest speaker. Traumatic surgery was the topic of the day.

WEST VIRGINIA

State Medical Election.—Dr. Richard O. Rogers, Bluefield, was named president-elect of the West Virginia State Medical Association at the annual meeting in Charleston, May 12-14. He will take office on Jan. 1, 1942. Vice presidents elected were Drs. Guy H. Michael, Belington, and Everett H. Starcher, Earling. The president for this year is Dr. Robert King Buford, Charleston. The 1942 meeting will be held in White Sulphur Springs.

Changes in State Health Department.—Dr. Starling D. Steiner, Wellsburg, health officer of Brooke County, has been appointed director of county health work in the state health department to succeed Dr. Bruce H. Pollock, Charleston, who recently reported for duty with the U. S. Navy. Dr. Leon A. S. Saler, Charleston, U. S. Public Health Service, has been named acting director of the bureau of venereal diseases to replace Dr. Leon A. Dickerson, Fayetteville, who is in active service in the U. S. Army.

GENERAL

Meeting of Science Writers.—John J. O'Neill, science editor, New York *Herald Tribune*, was elected president of the National Association of Science Writers at a meeting held in conjunction with the meeting of the National Academy of Sciences in Washington, D. C., recently. Stephen J. McDonough, science writer of the Associated Press, Washington, was reelected treasurer and made secretary under a newly adopted constitution. Dr. Thomas Parran, surgeon general, U. S. Public Health Service, gave an "off the record" talk on his observations of living conditions, health and the morale of the British people during his recent visit to England.

National Defense and Home Economics.—The annual convention of the American Home Economics Association will be held in Chicago, June 22-26, at the Stevens Hotel. The program includes addresses by Helen S. Mitchell, Ph.D., of the Federal Security Agency, Washington, D. C., on "The National Nutrition Outlook"; Mary I. Barber, M.S., food consultant, Office of Production Management, Washington, "How the American Army Is Fed"; Harriet Elliott, M.A., head of the Consumer Division, Office of Price Administration and Civilian Supply, Washington, on "Protecting Civilian Supply"; Ruby Thompson of the Federal Security Agency, Athens, Ga., "Better Diets Through Increased Home Food Production," and Hazel K. Stiebeling, Ph.D., U. S. Bureau of Home Economics, Washington, "Do We Want Better Nutrition?"

Guggenheim Fellowships.—Among eighty-five fellowships granted by the John Simon Guggenheim Memorial Foundation for research to be carried on in 1941-1942 were the following of medical interest:

Cornelius Becker Philip, Ph.D., medical entomologist in the U. S. Public Health Service, Hamilton, Mont., will write a book on ticks and their relation to animal and human disease. He will work in Mexico, Colombia and Brazil.

Kenneth Stewart Cole, Ph.D., associate professor of physiology at Columbia University, New York, and consultant physicist, Presbyterian Hospital, will study the electrical aspects of the structure and function of living nerve.

Berry Campbell, Ph.D., assistant professor of anatomy, University of Oklahoma School of Medicine, Oklahoma City, will study integrative mechanisms of the spinal cord with particular reference to the basic locomotor behavior patterns. He will work at the Rockefeller Institute for Medical Research, New York.

Dr. Israel Lyon Chaikoff, associate professor of physiology, University of California, Berkeley, will investigate the use of radioactive phosphorus and iodine as indicators of metabolic processes.

Physical Therapy Meeting.—The ninth annual seminar of the Western Section of the American Congress of Physical Therapy will be held in Los Angeles on June 22. Sessions will be held in Taulson Hall, White Memorial Hospital. The following will participate:

Dr. Clarence W. Dail, Loma Linda, Calif., Physical Measures in the Treatment of Peripheral Vascular Diseases.

Dr. Joseph C. Risser, Pasadena, Differential Diagnosis and Treatment of Lumbosacral and Sacroiliac Pathology.

Dr. Harry C. L. Lindsay, Pasadena, Physical Medicine in Dermatology.

Dr. David H. Kling, Los Angeles, Place of Physical Therapy in the Treatment of Arthritis.

Dr. William H. Northway, San Francisco, Clinical Value of Ultraviolet Light Therapy.

Drs. Fred B. Moor, Los Angeles, and Genevieve L. Joy, Melrose, Mass., Artificial Fever in Brucellosis.

Dr. Frances Baker, San Francisco, Treatment of Fungous Infections by Iontophoresis.

Dr. John S. Hibben, Pasadena, Clinical Evaluation of Various Heart Energies.

Dr. Rodney F. Atsatt, Santa Barbara, Calif., General Physical Therapy Management of Poliomyelitis.

Dr. Mary Cornell McReynolds, Angwin, Calif., Degenerative Changes in Periarticular Tissues.

National Science Fund Election.—William J. Robbins, Ph.D., director of the New York Botanical Gardens, New York, was elected chairman of the board of directors of the National Science Fund at an organization meeting, May 21, in New York, and Winthrop W. Aldrich, chairman of the board of directors of the Chase National Bank, New York, was elected vice chairman. The directors include former President Herbert Hoover; Albert F. Blakeslee, Ph.D., Cold Spring Harbor, N. Y.; Luther P. Eisenhart, LL.D., Princeton, N. J.; Dr. Herbert S. Gasser, Mr. Walter S. Gifford, Carleton J. H. Hays, Ph.D., and Frank B. Jewett, Ph.D., New York; Dr. Alfred N. Richards, Philadelphia; Dr. Ross G. Harrison, New Haven, Conn.; Harlow Shapley, Ph.D., Cambridge, Mass.; Mr. Tom K. Smith, St. Louis banker, and Dr. Robbins. The National Science Fund was created recently under the sponsorship of the National Academy of Sciences to receive and administer gifts for the support of fundamental scientific research. It will offer "altruistic people a permanent machinery for wise and fruitful investment in science," it was stated.

Special Society Elections.—Dr. James E. Paullin, Atlanta, Ga., was named president-elect of the American College of Physicians at the recent annual meeting in Boston, and Dr. Roger I. Lee, Boston, was installed as president. Vice presidents elected were Drs. David Sclater Lewis, Montreal, Que.; Thomas T. Holt, Wichita, Kan., and Samuel E. Munson, Springfield, Ill. The next annual session will be in St. Paul and the tentative dates are April 20-24, 1942.——Dr. John Jay Keegan, Omaha, was elected president of the Society of Neurological Surgeons at its annual meeting in Richmond, Va., May 1-3; Dr. Wilder G. Penfield, Montreal, Que., vice president, and Dr. Winchell McK. Craig, Rochester, Minn., secretary. The 1942 meeting will be in Boston.——Dr. Harry Goldblatt, Cleveland, was chosen president-elect of the American Society of Clinical Pathologists and Dr. John L. Lattimore, Topeka, Kan., was installed as president at the annual meeting in Cleveland, May 29 to June 2. Dr. Russell L. Haden, Cleveland, was elected vice president and Dr. Alfred S. Giordano, South Bend, Ind., reelected secretary. The Ward Burdick Medal was given to Drs. Harry P. Smith, Emory D. Warner and Kenneth M. Brinkhous, Iowa City, for their studies of vitamin K. ——Dr. J. Winthrop Peabody, Washington, D. C., was named president-elect of the American College of Chest Physicians at the annual meeting in Cleveland, May 31-June 2, and Dr. Benjamin Goldberg, Chicago, became president. Other officers elected were Drs. Jay Arthur Myers, Minneapolis, and Grover C. Bellinger, Salem, Ore., vice presidents, and Paul H. Holinger, Chicago, secretary.——Dr. Frederick W. Jackson, Winnipeg, Man., was elected president of the Conference of State and Provincial Health Authorities of North America at the annual meeting in Washington, D. C., recently. Dr. Carl V. Reynolds, Raleigh, N. C., was elected vice president and Dr. Albert J. Chesley, St. Paul, was reelected secretary.

Dr. Love Wins Golf Championship.—Dr. George R. Love of Oconomowoc, Wis., won the championship of the American Medical Golfing Association June 2 at the Cleveland Country Club and the Pepper Pike Club, Cleveland, in a record breaking field of two hundred and forty-three medical golfers. Dr. Love achieved a gross score of 149 for thirty-six holes by shooting three under par on the last nine holes of the difficult Pepper Pike course. He was presented with the Will Walter Trophy by Dr. David H. Houston, Seattle, president of the A. M. G. A. In addition to the trophy a sterling silver bowl was presented to Dr. Love as a permanent prize.

Dr. N. E. Baxter of Bloomington, Ind., won the thirty-six hole handicap championship, winning a leg on the Detroit Trophy and receiving a set of Kroydon irons.

Dr. James J. Marek of Cleveland was runner up champion with a score of 152. He bagged the famous St. Louis Trophy. Other winners in the thirty-six hole gross event were Dr. John M. Murphy, Detroit, and Dr. R. J. Smith, Buffalo.

Dr. J. J. Harrison, Napoleon, Ohio, won the President's Trophy for best net in the championship flight. Other winners were Drs. E. S. Edgerton, Wichita, Kan., and G. T. McKean, Detroit.

Dr. D. A. Williams, Kansas City, won the eighteen hole championship, gaining the Golden State Trophy. The runner up was Dr. L. J. Carson of Cleveland.

The eighteen hole handicap championship went to Dr. R. B. Dunn of Greensboro, N. C. Second place went to Dr. H. D. Chamberlain of McArthur, Ohio, who took home the Atlantic City Trophy.

In the event limited to players 60 years of age and over, the Minneapolis Trophy was won by Dr. Houston. Other winners in this event were Drs. L. L. Iseman, Chicago; W. E. Baker, Des Moines, Iowa, and J. F. Hawkins, Providence, R. I.

Dr. Homer K. Nicoll, Chicago, won the Wendell Phillips Trophy emblematic of championship among the past presidents of the American Medical Golfing Association. Other prize winning scores were turned in by past presidents, Drs. M. M. Cullom, Nashville, Tenn., and E. G. Zabriskie, New York.

The Section event, a new feature this year, included sterling silver pitchers for the Sections on Surgery, Urology and Neurology, presented respectively by Drs. Harry E. Mock, Harry Culver and George W. Hall, all of Chicago.

Dr. T. A. Kyner, Kansas City, was tops in the surgical section. Dr. L. F. Huffman of Cleveland won the urologic prize and Dr. C. Hunter Shelden of Los Angeles had the best score among the neurologists.

Other prize winners in the first, second and third flights were Drs. S. E. Gates, Conneaut, Ohio; J. G. Matthews, Spokane, Wash.; H. W. Salter, Cleveland; C. A. Good, Rochester, Minn.; P. J. O'Connell, Kansas City; W. R. Riddell, Jackson, Ohio; A. L. Ashmore, Wichita, Kan.; J. P. Hudock, Endicott, N. Y.; A. C. McCarty, Louisville, Ky.; J. B. Sampsell, Van Wert, Ohio; J. R. Fowler, Spencer, Mass.; H. A. Gentring, Kansas City; G. A. Hoke, Elyria, Ohio; H. C. Marsico, Valloyd Adair and A. J. Kirchner of Lorain, Ohio.

Dr. Harry E. Mock, Chicago, was elected president of the American Medical Golfing Association for the next year, Dr. John B. Morgan, Cleveland, first vice president, and Dr. H. V. Hubbard, Plainfield, N. J., second vice president. Bill Burns, Lansing, Mich., was reappointed executive secretary. Dr. Houston, the retiring president, was made a member of the board of directors. The next tournament will be held in Atlantic City in June 1942.

LATIN AMERICA

Prize for Prevention of Blindness.—The National League for the Prevention of Blindness in Brazil recently awarded its National Prize, established by the professional journalists' club of Rio de Janeiro, to the Secretariat of Education and Health of the state of Bahía, with a tribute to the initiative of the secretary, Dr. Isaias Alves, according to *Brasil-Medico*. The award was made in recognition of the secretary's work in creating the first class for conservation of vision in one of the primary schools of São Salvador.

Brazilian Congress of Ophthalmology.—Dr. Harry S. Gradle, Chicago, president of the Pan American Congress of Ophthalmology, will be a guest at the fourth Brazilian Congress of Ophthalmology, to be held in Rio de Janeiro, June 26 to July 1. Dr. Gradle will deliver an address on "Glaucoma Capsulare." Prof. Octavio Rego Lopes, Rio de Janeiro, is president of the congress and Dr. Natalicio de Farias, Rio de Janeiro, is secretary. Members of the committee in charge of the scientific program include Drs. Ivo Corrêa Meyer and Santayana Mascarenhas, Porto Alegre; Linneu Silva, Minas Geraes; Moacyr E. Alvaro, Souza Martins and J. J. Britto, São Paulo; Isaac Salazar, Recife; Cesario de Andrade and Francisco Ferreira, Bahía; Paulo Cesar Pimentel, Rio de Janeiro; Deusdedith Coêlho Duarte, Pará, and Leonidas Ferreira, Paraná. Official subjects of discussion chosen for the congress are the relationship between ophthalmology and legal medicine, constitution in ophthalmology and vision of school children.

FOREIGN

Personal.—Lieut. Col. George S. Parkinson has been appointed acting dean of the London School of Hygiene and Tropical Medicine. He replaces Sir William Wilson Jameson, who has been appointed chief medical officer of the Ministry of Health.

Rockefeller Foundation War Workers.—Drs. Hugh H. Smith, recently in Bogotá, Colombia, Arnold P. Meiklejohn, Boston, and William D. Robinson, Ann Arbor, Mich., have been appointed members of the Rockefeller Foundation health commission for war work and were to sail for Europe on April 19, according to *Science*. Dr. Smith and Dr. Meiklejohn were to be attached to the British Ministry of Health and Dr. Robinson was to go to Madrid to study nutrition in Spain.

Plastic Surgery in Great Britain.—Nine centers for maxillofacial units are handling this service in the British Army and to these units come cases requiring plastic surgery. Three other units in the London area are under the leadership of Sir Harold D. Gillies, Mr. Archibald H. McIndoe and Mr. Rainsford Mowlem. Sir Harold is in charge of the entire group. Information comes to us to the effect that Sir Harold's home was struck by a bomb and that his eldest son is now a prisoner after a forced landing of his plane.

Social Hygiene Worker Receives Snow Medal.—Mrs. Sybil Neville Rolfe, secretary general of the British Social Hygiene Council, received the William Freeman Snow Award at the recent annual meeting of the American Social Hygiene Association in Philadelphia. Mrs. Rolfe was secretary of the National Council for Combating Venereal Diseases from 1915 to 1925 and continued as secretary general when that organization became the British Social Hygiene Council. The award was accepted for her in her unavoidable absence by her cousin, Dr. Helen Ingleby, Philadelphia. This is the fourth Snow award. The previous recipients were Dr. Edward L. Keyes, New York; Dr. Thomas Parran, surgeon general, U. S. Public Health Service, and Gen. John J. Pershing, Washington, D. C.

Foreign Letters

BUENOS AIRES

(From Our Regular Correspondent)

March 17, 1941.

Second Pan American Congress for Endocrinology

The second Pan American Congress for Endocrinology met March 5-8 in Montevideo, Uruguay. It was exceptionally well attended. Dr. Juan Cesar Mussio Fournier, minister of public health and director of the Institute of Endocrinology of Montevideo, was chairman. Official delegates were present from the other South American countries. The United States was represented by Drs. Oscar Riddle, George W. Corner, R. L. Zwemer, H. M. Evans and F. C. Koch, with Dr. Elmer Sevringhaus head of the delegation. A scientific exhibit was on display with numerous clinical diagrams, pictures and graphs and an anatomic collection from the physiologic institute of Buenos Aires. Prof. B. A. Houssay pointed out that the progress of endocrinology was hindered by charlatans as well as by endocrinologists who with literary skill and a productive imagination embellished the facts of science. The true progress of endocrinology, however, is due to experimental and clinical research workers whose serious investigations are conducted in the privacy of the laboratory and the ward. In the industrial production of hormones and organotherapeutic products there was a danger that the pressure of material considerations was such as to confuse the distinction between the pure scientist and the industrial technician. Dr. Sevringhaus extended the greetings of the Oficina Sanitaria Panamericana. He called for a closer definition of terminological usage such as that of catalysis, correlation and others.

The sections included those of histology and pathologic anatomy, biology, physiology, internal medicine, cardiology, pediatrics, psychiatry, therapy, radiology, surgery, obstetrics and gynecology, urology, social medicine and dentistry. Dr. Sevringhaus opened the scientific proceedings by discussing the contributions of North American research workers to endocrinology. Professor Houssay discussed insulin secretion and its regulation. Dr. Herbert M. Evans of California spoke on internal secretion of the anterior lobe of the hypophysis. Dr. Riddle of the Carnegie Institute discussed the role which hormones of the hypophysis play in carbohydrate metabolism. Dr. Pou Orfila discussed the syndromes produced by sex hormones in women and stressed the need of basing therapy on clearly determined clinical pictures so as to avoid disturbances arising not from the disease but from mistaken therapy. Dr. E. E. Krapf called attention to grave manifestations of depression in European women who had recently immigrated, occurring in connection with the change in the seasons and with menstrual dysfunction. Dr. Buño spoke on endocrine disturbances in school children on the basis of 1,000 cases, Drs. O. and A. Pichón Riviere treated the subject of oligothymia and endocrine disorders, Dr. Camacho the medicosocial significance of the colloid goiter and Dr. Mira, formerly professor of psychiatry in Barcelona, the present status of endocrine psychoses. Prof. Del Río Ortega discussed the functional structure of the epiphysis.

In the section for physiology, Dr. W. Wolf of the United States discussed the value and determination of basal metabolism. J. A. Collazo, A. Munilla, José M. Jorge and Mario Nirenstein treated the relations between vitamins and hormones. A. V. Di Ció and M. Schteingart discussed the effect of vitamin C on the activity of the testicular hormones. In the section for pediatrics, Dr. Cerviño spoke on temporary forms of hypothyroidism in children. Dr. Cibils Aguirre and his collaborators discussed endocrine disturbances in children and Dr. Perez del Castillo, dystrophy and growth. Drs. Rascovsky, Pichón Riviere and Saltzman schematized the constituent elements of the prepuberal adiposogenital syndrome in males, based on 100 cases. In the section of cardiology Prof. De Castro of Brazil discussed hypertension and the climacteric. In the combined sections of psychiatry and social medicine Dr. Alcuña and Halperín Pinos reported on the menstruation of Argentinean women in the city of Buenos Aires. Dr. Cantilo and Dr. Esteves Balado discussed the role of endocrine disturbances in schizophrenia; Dr. Gregorio Bermann, hermaphrodism and Drs. L. Fraenkel and Saesser, schizophrenia and infantilism.

In the combined sections of surgery and gynecology, A. Lipschuetz of Santiago de Chile read a paper on the experimental endocrine foundations of the origin of epithelial tumors in the female genital tract. L. Fraenkel and his collaborators discussed the relations between the mammary glands and internal secretions, and Del Castillo, Membrives and De la Balze gynecomastia and pulmonary carcinoma. In the physiologic section, Professor Houssay and Dr. Del Castillo discussed the thymus and the adrenal glands. The National Institute of Nutrition in Buenos Aires was represented by a number of speakers. Prof. Pedro Escudero discussed the effect of nutrition on diabetes in children and the effect of the relations between the fat and carbohydrate content of food on the structure of the pancreas. In the section for biology Dr. Keppler spoke on the diagnosis and treatment of tumors of the adrenal cortex, and Dr. Plá in the section of internal medicine on the function of the thyroid gland.

In the concluding session the memory of Professor Banting, who recently lost his life in an airplane crash, was honored by adoption of a resolution that the picture and a biographic sketch of the deceased be included in the publication of the congress. Two recommendations presented by Dr. Sevringhaus were adopted, namely that the publications in the field of endocrinology appear in Spanish, Portuguese and English and the participation by the congress in the development of standardizing methods analogous to those conducted by the North American Society for the Study of Internal Secretions. The next congress is to meet in 1943 in Buenos Aires under the direction of Prof. Bernardo A. Houssay.

The congress accomplished much in establishing closer relations between North and South American research workers. It was the first time that the two continents held joint sessions in this field of scientific inquiry. The contributions of Professors Evans, Sevringhaus, Corner, Koch, Riddle, Selye of Canada, Martins of Brazil, of the Uruguayan research men and of Bernardo Houssay, Enrique del Castillo, Oscar Arias, Juan T. Lewis and Pedro Escudero were highly appreciated.

Between March 13 and 17, on invitation of the Argentine Society for Endocrinology, lectures were given by Prof. G. W. Corner on the menstrual cycle in monkeys, by Thales Martins of Rio de Janeiro on sex hormones, by E. Kepler on the clinical diagnosis of tumors of the adrenal cortex, by A. Lipschuetz of Santiago de Chile on the experimental endocrine foundations of tumor causation, by H. M. Evans on gonadotropic substances of the hypophysis, by Elmer Sevringhaus on the diagnosis and treatment of the menopause and by A. Selye on alarm reactions. Besides, lectures were delivered on invitation of the medical faculties of Rosario and Córdoba.

Marriages

WILLIAM EDWARD BONES, Pulaski, Va., to Miss June Constance Norris at Melbourne, Australia, June 13.

WALTER A. FENSTERMACHER, Rochester, N. Y., to Miss Dorothy M. Shaw, May 5.

JOHN ELBERT DUNLAP to Miss Marianne Touchstone, both of Dallas, Texas, May 23.

ELLERTON GORDON ALDRICH to Miss Isobel Mary Millar, both of Detroit, May 24.

Deaths

Bransford Lewis ✠ St. Louis; Missouri Medical College, St. Louis, 1884; an Affiliate Fellow of the American Medical Association and a member of its House of Delegates in 1913; lecturer in genitourinary surgery at his alma mater from 1893 to 1895; professor of urology at St. Louis University School of Medicine from 1900 to 1930 and since 1930 professor emeritus; member of the American Association of Genito-Urinary Surgeons; member and past president of the American Urological Association; fellow of the American College of Surgeons; past president of the Mississippi Valley Medical Association; in 1933 vice president of the Pan American Medical Congress; assistant superintendent of St. Louis City Hospital in 1889, on the staff from 1902 to 1905 and from 1910 to 1912; on the staff of the Missouri Pacific Hospital from 1892 to 1896, Rebekah Hospital from 1901 to 1914, Deaconess Hospital from 1905 to 1912, Frisco Hospital from 1898 to 1915; since 1912 urologist to St. John's Hospital; translated from the German "Genitourinary Diagnosis and Therapy for Urologists and General Practitioners," by Dr. E. Portner; co-author of "Cystoscopy and Urethroscopy"; edited a "History of Urology" in 1933, and wrote the chapter on the history of the American Urological Association; contributed largely to the development of the modern cystoscope; aged 78; died, May 18, at his summer home near St. Clair, Mo.

Manford Repp Waltz ✠ Seattle; Northwestern University Medical School, Chicago, 1918; member of the American Laryngological, Rhinological and Otological Society and the Pacific Coast Oto-Ophthalmological Society; fellow of the American College of Surgeons; on the staffs of the Swedish Hospital, Providence Hospital, Seattle General Hospital and the Children's Orthopedic Hospital; aged 50; died, April 20, of cerebral embolism.

Aurelius Rives Shands, Washington, D. C.; University of Maryland School of Medicine, Baltimore, 1884; member of the Medical Society of the District of Columbia and the Southern Surgical Association; fellow of the American College of Surgeons; past president of the American Orthopedic Association; formerly clinical professor of orthopedic surgery, George Washington University School of Medicine; aged 80; died, April 27, of coronary thrombosis, arteriosclerosis and pneumonia.

Harold Lynwood Warwick ✠ Fort Worth, Texas; University of Georgia Medical Department, Augusta, 1900; member of the American Academy of Ophthalmology and Otolaryngology; fellow of the American College of Surgeons; past president of the Tarrant County Medical Society; served during the World War; on the staffs of St. Joseph's and Methodist hospitals; aged 63; died, April 28, of carcinoma of the bladder.

Alfred Edwin Baker ✠ Richmond Hill, N. Y.; Queen's University Faculty of Medicine, Kingston, Ont., Canada, 1906; fellow of the American College of Surgeons; attending obstetrician and gynecologist, Queens General and Jamaica hospitals, Jamaica, and Creedmoor State Hospital, Queens Village; on the associate staff of the Mary Immaculate Hospital, Jamaica; aged 65; died, April 29, of coronary thrombosis.

Lewis Marshall Van Meter ✠ Denver; University of Virginia Department of Medicine, Charlottesville, 1897; fellow of the American College of Surgeons; served during the World War; on the staffs of the Denver General Hospital, Presbyterian Hospital, Mercy Hospital and St. Anthony's Hospital; aged 70; died in April of coronary sclerosis.

Edward Marion Frank Stephen ✠ Galveston, Texas; University of Texas School of Medicine, Galveston, 1916; formerly assistant surgeon in the United States Public Health Service; past president of the Galveston County Medical Society; on the staff of the United States Marine Hospital; aged 54; died, April 25, of hypostatic pneumonia.

Alice Gardner Whittinghill Davis, Owensboro, Ky; University of Michigan Medical School, Ann Arbor, 1933; member of the Kentucky State Medical Association; formerly secretary of the Daviess County Medical Society; aged 32; died, April 20, in the Owensboro-Daviess County Hospital of toxemia following childbirth.

Jane Drusie McIntosh Wright, Clear Lake, Iowa; State University of Iowa College of Medicine, Iowa City, 1898; member of the Iowa State Medical Society; past president of the State Society of Iowa Medical Women; aged 73; died, April 26, in Mason City of injuries received in a fall in March.

Charles White Berry, Charlottesville, Va.; Columbia University College of Physicians and Surgeons, New York, 1896; formerly associate professor of clinical pediatrics at the New York Post-Graduate Medical School; served during the World War; aged 70; died, April 30, of aplastic anemia.

Arthur Eddy West, Kalamazoo, Mich.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1897; member of the Michigan State Medical Society; aged 66; died, April 22, in the Bronson Hospital of cirrhosis of the liver, arteriosclerosis and heart disease.

Thomas Wynn Morgan ✠ Virden, Ill.; Rush Medical College, Chicago, 1900; served during the World War; aged 62; died, April 9, in the Barnes Hospital, St. Louis, of respiratory paralysis following a cranial operation for Ménière's disease.

Arch Burl Thompson ✠ Milwaukee; University of Louisville (Ky.) Medical Department, 1914; member of the Indiana State Medical Association; on the staff of the Veterans Administration Facility; aged 53; died, April 18, of coronary occlusion.

Delbert S. Wilbur, Naples, N. Y.; Albany Medical College, 1897; member of the Medical Society of the State of New York; for many years health officer and member of the board of education; aged 72; died, April 19, of cerebral meningitis.

William J. L. Millar, Rensselaer Falls, N. Y.; University of Buffalo School of Medicine, 1893; served as health officer of Rensselaer Falls; school physician and a member of the school board; aged 75; died, April 15, of diabetes mellitus.

Clarence Henry Willig, Mars, Pa.; Temple University School of Medicine, Philadelphia, 1933; member of the Medical Society of the State of Pennsylvania; aged 39; died, April 24, in St. Joseph's Hospital, Pittsburgh, of coronary occlusion.

Roland Earl Taylor, Windsor, Ont., Canada; University of Toronto Faculty of Medicine, 1922; served during the World War; on the staffs of the Grace Hospital, Metropolitan General Hospital and the Hotel Dieu; aged 44; died, March 14.

Bernard Joseph Mulholland, Lawrence, Mass.; Baltimore Medical College, 1906; member of the Massachusetts Medical Society; aged 57; died, April 16, in the Mary E. McGowan Memorial Hospital, Methuen, of cirrhosis of the liver.

John William Phares ✠ Evansville, Ind.; Kentucky School of Medicine, Louisville, 1897; fellow of the American College of Surgeons; on the staff of the Protestant Deaconess Hospital; aged 72; died, April 27, of coronary thrombosis.

Louis M. Pearson, Wausau, Wis.; Rush Medical College, Chicago, 1904; member of the State Medical Society of Wisconsin; served during the World War; aged 62; died, April 21, in the Memorial Hospital of chronic myocarditis.

Marion Margaret Wallace ✠ Chicago; University of Illinois College of Medicine, Chicago, 1934; aged 53; died, April 15, in the Women and Children's Hospital of cerebral hemorrhage and hypertensive cardiovascular renal disease.

Louis Ruch, Englewood, N. J.; Cornell University Medical College, New York, 1911; aged 61; on the staff of the Holy Name Hospital and the Englewood Hospital, where he died, April 26, of cerebral hemorrhage and hypertension.

Sam Sharp Templin, Galveston, Texas; University of Texas School of Medicine, Galveston, 1926; instructor in medicine at his alma mater; on the staff of the John Sealy Hospital; aged 48; died, April 15, of coronary thrombosis.

Reuben Golding Blackburn, Marion, S. C.; Medical College of the State of South Carolina, Charleston, 1910; formerly member of the state legislature; aged 62; died, April 9, of diabetes mellitus and coronary arteriosclerosis.

Eugene Theodore Stephenson, Washington, D. C.; George Washington University School of Medicine, Washington, 1907; member of the Medical Society of the District of Columbia; aged 68; died, April 12, of coronary thrombosis.

George Spencer Lape, Binghamton, N. Y.; Albany Medical College, 1904; member of the Medical Society of the State of New York; aged 62; died, March 11, of arteriosclerosis, Parkinson's syndrome and cerebral thrombosis.

Joseph Michael O'Maley, Miami, Fla.; Miami Medical College, Cincinnati, 1909; served during the World War; aged 68; died, April 11, in St. Francis Hospital, Miami Beach, of coronary sclerosis and bronchopneumonia.

Sarah Felt Richardson, Munfordville, Ky.; Hering Medical College, Chicago, 1898; member of the Kentucky State Medical Association; secretary of the Hart County Medical Society; aged 70; died, April 7.

Hosea M. Rymer, Harrisville, W. Va.; University of Louisville (Ky.) Medical Department, 1893; member of the West Virginia State Medical Association; aged 71; died, April 15, of angina pectoris.

James Wilbur Brandon, Big Clifty, Ky.; University of Louisville (Ky.) Medical Department, 1906; member of the Kentucky State Medical Association; aged 59; died, April 30, of cerebral hemorrhage.

Charles K. Kernan, Pulaski, Va.; University of Maryland School of Medicine, Baltimore, 1887; aged 79; died, April 18, in the Southwestern State Hospital, Marion, of arteriosclerosis and pulmonary tuberculosis.

Arthur Alexander Johnston Simpson, Kintail, Ont., Canada; M.B., Victoria University Medical Department, Coburg, 1903; M.D., Trinity Medical College, Toronto, 1904; aged 77; died, March 21.

William A. Starkey, Atlanta, Texas; Gate City Medical College, Texarkana, Ark., 1906; member of the State Medical Association of Texas; aged 71; died, April 21, of myocarditis and hypostatic pneumonia.

Constantinos N. Lyras, Long Beach, N. Y.; National University of Athens School of Medicine, Greece, 1895; aged 68; died, March 22, of cerebral arteriosclerosis, bronchopneumonia and hypertension.

Ritchie Christian Ovens, Jersey City, N. J.; New York Homeopathic Medical College and Hospital, New York, 1901; served during the World War; aged 62; died, April 11, of cerebral hemorrhage.

William Robertson, Elora, Ont., Canada; McGill University Faculty of Medicine, Montreal, Que., 1890; for many years medical officer of health for Pilkington township; aged 76; died, March 30.

Hugh James White ✠ Hammond, Ind.; Northwestern University Medical School, Chicago, 1906; served during the World War; aged 61; died, April 21, in St. Margaret's Hospital of pneumonia.

Joseph B. Shannon, Fort Worth, Texas; Maryland Medical College, Baltimore, 1905; member of the State Medical Association of Texas; aged 59; died, April 19, of aneurysm and arteriosclerosis.

Roger Francis Murray, Union City, N. J.; Georgetown University School of Medicine, Washington, D. C., 1930; on the staff of St. Mary's Hospital; aged 37; died, April 14, of heart disease.

Herschel S. Lowrance, Topeka, Kan.; American Medical College, St. Louis, 1881; for many years on the staff of the Kankakee (Ill.) State Hospital; aged 85; died, April 12, of myocarditis.

Jerome Lloyd Silverstein, San Francisco; Stanford University School of Medicine, 1939; intern at the Stanford University Hospitals; aged 26; died, March 30, of bronchopneumonia.

William Richard Sears, Brooklyn; Long Island College Hospital, Brooklyn, 1900; served during the World War; at one time a ship's surgeon; died, April 18, in the Kings County Hospital.

Berthold F. Bertram ✠ Detroit; Michigan College of Medicine and Surgery, Detroit, 1892; aged 70; died, April 30, in St. Joseph Hospital of acute dilatation of the heart and hypertension.

William Penn Sims ✠ Burkburnett, Texas; College of Physicians and Surgeons, Memphis, Tenn., 1911; served during the World War; aged 52; died, March 19, of coronary occlusion.

Edwin Alonzo Clark, Los Angeles; Western Reserve University Medical Department, Cleveland, 1890; aged 77; died, March 21, of arteriosclerosis, hypertension and heart disease.

Paul Edouard Garneau, Quebec, Que., Canada; Laval University Faculty of Medicine, Quebec, 1924; professor of descriptive anatomy at his alma mater; aged 43; died, March 11.

Fred B. Kell, San Bernardino, Calif.; St. Louis University School of Medicine, 1913; member of the California Medical Association; aged 53; died, April 23, of coronary sclerosis.

Delphine Hanna, Castile, N. Y.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1890; aged 86; died, April 16, in the Greene Sanitarium of arteriosclerosis.

Albert Tennyson Webb, Santa Barbara, Calif.; University of Pennsylvania Department of Medicine, Philadelphia, 1891; also a dentist; aged 75; died, April 28, in Las Vegas, Nev.

William Frank Neide ✠ Seaford, Del.; Hahnemann Medical College and Hospital of Philadelphia, 1931; aged 35; died, April 13, in the Mound Park Hospital, St. Petersburg, Fla.

Elijah Leonard Hardman, Allerton, Ill.; Western Reserve University Medical Department, Cleveland, 1891; aged 78; died, April 21, in the Carle Memorial Hospital, Urbana.

Frederic Clarence Calvert, San Diego, Calif.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1908; aged 57; died, March 16, of pulmonary embolism.

William Spencer Richards, Buffalo; University of the City of New York Medical Department, 1889; aged 74; died, March 6, of cardiovascular renal disease and uremia.

Alexander Penrose Forbes Gammack, South Bend, Ind.; University of Aberdeen Faculty of Medicine, Scotland, 1889; aged 73; died, April 20, of congestive heart disease.

William Ford Ward, Binghamton, N. Y.; Hahnemann Medical College and Hospital of Philadelphia, 1897; aged 67; died, March 11, of rheumatic cardiovascular disease.

Lillian Boldemann, San Francisco; Hahnemann Hospital College of San Francisco, 1896; aged 69; died, March 19, of heart disease and carcinoma of the stomach.

William F. Sibbett, Douglas, Ga.; Atlanta Medical College, 1888; member of the Medical Association of Georgia; at one time mayor; aged 87; died, March 11.

Samuel Bismarck McLeary, Columbus, Texas; Jefferson Medical College of Philadelphia, 1889; aged 74; died, April 3, of arthritis deformans and arteriosclerosis.

John Paul Stawicki, Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1908; aged 61; died, April 18.

John Jay Williams, St. Louis; College of Physicians and Surgeons, Keokuk, Iowa, 1878; aged 88; died, April 23, of chronic myocarditis and arteriosclerosis.

Horace Percy Wilkins, Birmingham, Ala.; McGill University Faculty of Medicine, Montreal, Que., Canada, 1887; aged 74; died, March 5, in Miami, Fla.

Wenceslao Olvera Zuniga, Los Angeles; Universidad Nacional Facultad de Medicina, Mexico, D. F., 1909; aged 58; died, March 3, of a ruptured spleen.

Fred A. Perrigo, Huntington Park, Calif.; Hahnemann Medical College and Hospital, Chicago, 1898; aged 73; died, March 29, of coronary thrombosis.

Frank Hastings Starr, Corning, N. Y.; Bellevue Hospital Medical College, New York, 1889; aged 76; died, April 16, of cardiac decompensation and uremia.

Benjamin Alexis Sherrell, Dellrose, Tenn.; Vanderbilt University School of Medicine, Nashville, 1892; aged 79; died, April 15, of cerebral hemorrhage.

William H. Murray, Waterbury, Conn.; Bellevue Hospital Medical College, New York, 1890; aged 76; died, April 22, of chronic myocarditis.

George W. B. Swaim, Seattle; Missouri Medical College, St. Louis, 1885; aged 83; died, April 12, of bronchopneumonia and chronic myocarditis.

John Andrew Kane, Cobalt, Ont., Canada; L.R.C.P., L.R.C.S., Edinburgh, and L.F.P.S., Glasgow, Scotland, 1906; aged 63; died, March 8.

John Edward Sutton ✠ Albion, N. Y.; University of Buffalo School of Medicine, 1883; aged 85; died, April 17, of cerebral hemorrhage.

Alfred P. Rainier, Remington, Ind.; St. Louis College of Physicians and Surgeons, 1903; aged 62; died, April 11, of secondary anemia.

Julia A. Meyer, Los Angeles; Homeopathic Medical College of Missouri, St. Louis, 1904; aged 75; died, March 9, of arteriosclerosis.

Elwin Wilder Gammon, Orlando, Fla.; Rush Medical College, Chicago, 1892; aged 74; died, April 23, in Fort Lauderdale.

John Fraser Lockwood, Whittier, Calif.; Albany (N. Y.) Medical College, 1881; aged 86; died, March 2, of coronary thrombosis.

Thomas Walter Blanshard, Burlington, Ont., Canada; University of Toronto Faculty of Medicine, 1905; died, March 12.

Gustave Paul Gehring, San Diego, Calif.; Jefferson Medical College of Philadelphia, 1890; aged 84; died, March 15, of senility.

Leonard G. Cromer, Union City, Ind.; Medical College of Ohio, Cincinnati, 1890; aged 82; died, April 29.

Carrie Yetter, San Francisco; California Medical College, San Francisco, 1890; aged 86; died, March 5.

B. Wilbur Breedlove, Downs, Ala.; Atlanta (Ga.) Medical College, 1893; aged 68; died, April 30.

Bureau of Investigation

CEASE AND DESIST ORDERS

Abstracts of Certain Federal Trade Commission Releases

The work of the Federal Trade Commission, in helping to protect the public against misrepresentation or fraud in the medical as well as other fields, has been greatly extended by the provisions of the Wheeler-Lea Amendment to the Federal Trade Commission Act. The Food, Drug and Cosmetic Act of 1938 added to the Food and Drug Administration's control of the advertising claims and statements made on the labels of medicines or on the carton or in the accompanying leaflet, whereas what might be termed collateral advertising, that which appears in newspapers and magazines and over the air, comes more actively under the purview of the Federal Trade Commission, by virtue of the Wheeler-Lea Amendment.

THE JOURNAL has at various times commented on the activities of the Federal Trade Commission in this connection, even before the Wheeler-Lea Amendment gave it its added rights. In some cases the Commission may accept from the person or concern involved a stipulation that the objectionable practices or claims cited will be discontinued. In other cases the Commission issues what is known as a Cease and Desist Order, in which the individual, manufacturer or distributor cited is ordered to cease and desist from practices which have been declared objectionable.

Abstracts of some of the orders issued during 1940 follow:

"Man's" Products.—Edward L. Leisenring, trading as U. S. Drug and Sales Company, U. S. Drug Laboratories and U. S. Drug Company, and Gordon Leisenring, both of Denver, put out some products under this brand. Apparently all were essentially the same except for being sold in different strengths. The names used were "Man's Tonic," "Man's Pep Tonic," "U. S. Special Tablets" and "Sextogen Capsules for Men or Women." On June 17, 1940, the Federal Trade Commission, having found false claims in the advertising, ordered the defendants to cease and desist from further representing that their preparations are safe, competent or reliable tonics or aphrodisiacs, or are scientific treatments for strengthening or rejuvenating the glands or sexual organs of men or women, or that these products have any value in the treatment of debility, or to fail to make clear in the advertising that these products may result in serious or irreparable injury to the health of the user.

Monticello Drug Company.—On July 6, 1940, this Jacksonville, Fla., concern was ordered by the Federal Trade Commission to cease and desist from representing that its preparations check, cure or stop colds; constitute a complete treatment for colds, whether taken or administered singly or in conjunction with each other; cure malaria, or are the speediest remedies known for colds, malaria, chills and fever, or bilious fever due to malaria. The order also forbids representations that the respondent's preparations are commonly prescribed by physicians. The Bureau of Investigation's records show that this concern puts out something called "666" in three forms—liquid, tablet and salve. In May 1935 the government declared that the salve was sold under fraudulent claims as an alleged remedy for catarrh, chills, streptococcic infections and some other things. The government chemists reported that it was composed essentially of volatile oils, including those of camphor, menthol and eucalyptus, and a coniferous oil, such as cedar leaf oil, in petrolatum. The Ohio Dairy and Food Division once reported finding the "666 Liquid" to be a watery solution containing citric acid, iron, manganese and quinine.

Periodic Relief Pills.—These were put out as a remedy for delayed menstruation by one William W. Kelso, Seattle, trading as Northwestern Products Company and as Northwestern Health Clinic. Kelso was ordered by the Federal Trade Commission on July 1, 1940, to discontinue any advertisements of his product that failed to reveal that its use might result in serious and irreparable injury to health.

Pow-O-Lin.—This product was put out by the Herb Juice-Penol Company, Inc., trading as Pow-O-Lin Laboratories, Danville, Va. It was dealt with at some length in THE JOURNAL, June 25, 1938, page 2170. That article disclosed that from the A. M. A. chemists' report it was concluded that the nostrum was essentially a water-alcohol solution of plant extractives flavored with licorice. The article also brought out that the Federal Trade Commission on Dec. 23, 1937, had represented that the Pow-O-Lin people had signed a stipulation with the commission to cease advertising that "Pow-O-Lin" was "capable of relieving biliousness, nervousness, indigestion and countless ills due to constipation, unless these assertions are limited to temporary relief from constipation." Apparently the concern did not discontinue all its advertising misrepresentations, however, for on June 10, 1940, the Commission issued a definite order directing this outfit to cease and desist from implying certain things unwarrantedly. Among these were that Pow-O-Lin is a cure or remedy for constipation and "faulty elimination" characterized by and associated with symptoms such as biliousness, indigestion, gas pains, headaches, dizziness, pains in the back or chest, stiffness of the joints, swollen feet or ankles, nervousness, insomnia, loss of appetite or lack of energy.

Medical Examinations and Licensure

COMING EXAMINATIONS

NATIONAL BOARD OF MEDICAL EXAMINERS EXAMINING BOARDS IN SPECIALTIES

Examinations of the National Board of Medical Examiners and Examining Boards in Specialties were published in THE JOURNAL, June 14, page 2714.

BOARDS OF MEDICAL EXAMINERS

ARIZONA:* Phoenix, July 1-2. Sec., Dr. J. H. Patterson, 826 Security Bldg., Phoenix.

CALIFORNIA: *Oral examination* (required when reciprocity application is based on a state certificate or license issued ten or more years before filing application in California), Los Angeles, July 14. *Written.* San Francisco, June 30-July 3. Sec., Dr. Charles B. Pinkham, 1020 N St., Sacramento.

CONNECTICUT:* *Medical. Written.* Hartford, July 8-9. *Endorsement.* Hartford, July 22. Sec., Dr. Creighton Barker, 258 Church St., New Haven. *Homeopathic.* Derby, July 15-16. Sec., Dr. Joseph H. Evans, 1488 Chapel St., New Haven.

DELAWARE: July 8-10. Sec., Medical Council of Delaware, Dr. Joseph S. McDaniel, 229 S. State St., Dover.

FLORIDA:* Jacksonville, June 23-24. Sec., Dr. William M. Rowlett, Box 786, Tampa.

HAWAII: Honolulu, July 14-17. Sec., Dr. James A. Morgan, 48 Young Bldg., Honolulu.

IDAHO: Boise, Oct. 7. Dir., Bureau of Occupational License, Mr. Walter Curtis, 355 State Capitol Bldg., Boise.

ILLINOIS: Chicago, June 24-26. Supt. of Registration, Mr. Lucien A. File, Department of Registration and Education, Springfield.

MAINE: Augusta, July 1-2. Sec., Board of Registration in Medicine, Dr. Adam P. Leighton, 192 State St., Portland.

MASSACHUSETTS: Boston, July 8-11. Sec., Board of Registration in Medicine, Dr. Stephen Rushmore, 413-F State House, Boston.

MISSISSIPPI: Jackson, June 25-26. Asst. Sec., State Board of Health, Dr. R. N. Whitfield, Jackson.

MONTANA: Helena, Oct. 6-8. Sec., Dr. Otto G. Klein, First National Bank Bldg., Helena.

NEVADA: *Reciprocity with oral examination,* Aug. 4. Sec., Dr. Fred M. Anderson, 215 N. Carson St., Carson City.

NEW HAMPSHIRE: Concord, Sept. 11-12. Sec., Board of Registration in Medicine, Dr. T. P. Burroughs, State House, Concord.

NEW MEXICO: Santa Fe, Oct. 13-14. Sec., Dr. Le Grand Ward, 135 Sena Plaza, Santa Fe.

NEW YORK: Albany, Buffalo, New York and Syracuse, June 23-26. Chief, Bureau of Professional Examinations, Mr. Herbert J. Hamilton, 315 Education Bldg., Albany.

NORTH DAKOTA: Grand Forks, July 1-4. Sec., Dr. G. M. Williamson, 4½ S. Third St., Grand Forks.

OREGON:* Portland, July 24-26. Final date for filing application is July 9. Exec. Sec., Miss Lorienne M. Conlee, 608 Failing Bldg., Portland.

PENNSYLVANIA: Philadelphia and Pittsburgh, July 8-12. Act. Sec., Bureau of Professional Licensing, Department of Public Instruction, Mrs. Marguerite G. Steiner, 358 Education Bldg., Harrisburg.

RHODE ISLAND:* July 10. Acting Chief, Division of Examiners, Mr. E. Clyde Thomas, 366 State Office Bldg., Providence.

SOUTH CAROLINA: Columbia, June 23-25. Sec., Dr. A. Earle Boozer, 505 Saluda Ave., Columbia.

SOUTH DAKOTA:* Pierre, July 15-16. Dir., Medical Licensure, Dr. J. F. D. Cook, State Board of Health, Pierre.

WASHINGTON:* Seattle, July 21-23. Sec., Department of Licenses, Mr. Nelson N. Vaughan, Olympia.

WEST VIRGINIA: Wheeling, July 7-9. Sec., Public Health Council, Dr. C. F. McClintic, State Capitol, Charleston.

WISCONSIN:* Milwaukee, June 24-27. Sec., Dr. H. W. Shutter, 425 E. Wisconsin Ave., Milwaukee.

* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

DISTRICT OF COLUMBIA: Washington, Oct. 20-21. Sec., Dr. George C. Ruhland, 203 District Bldg., Washington.

IOWA: Des Moines, July 8. Dir., Division of Licensure and Registration, State Department of Health, Mr. H. W. Grefe, Capitol Bldg., Des Moines.

NEBRASKA:* Lincoln, Oct. 7-8. Dir., Bureau of Examining Boards, Mrs. Jeannette Crawford, 1009 State Capitol Bldg., Lincoln.

OREGON: Corvallis, July 12. Sec., State Board of Higher Education, Mr. Charles D. Byrne, University of Oregon, Eugene.

RHODE ISLAND: Providence, Aug. 20. Acting Chief, Division of Examiners, Mr. E. Clyde Thomas, 366 State Office Bldg., Providence.

WASHINGTON: Seattle, July 17-18. Sec., Department of Licenses, Mr. Nelson N. Vaughan, Olympia.

Iowa Reciprocity Report

The Iowa State Board of Medical Examiners reports 9 physicians licensed to practice medicine by reciprocity from January 10 through March 14. The following schools were represented:

School	LICENSED BY RECIPROCITY	Year Grad.	Reciprocity with
Loyola University School of Medicine		(1929)	Illinois
Northwestern University Medical School		(1938)	Minnesota
University of Kansas School of Medicine		(1923)	Kansas
College of Physicians and Surgeons of Baltimore		(1908)	W. Virginia
John A. Creighton Medical College		(1915)	Nebraska
University of Nebraska College of Medicine		(1916), (1934)	Nebraska
Temple University School of Medicine		(1932)	Penna.
University of Wisconsin Medical School		(1928)	Wisconsin

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Medical Practice Acts: Unlicensed Practice of Chiropractic; Entrapment.—Although not possessing a license to practice medicine in the state of Texas, the defendant had, nevertheless, been engaged in the practice of chiropractic in that state for sixteen years. An investigator for the Texas State Board of Medical Examiners noticed a sign in front of the defendant's home which read "J. M. Peery, Chiropractor" and discovered that the defendant was not registered with the county clerk as required by law. The investigator made arrangements with a woman to apply to the defendant for treatment and gave to her $2 to pay for the treatment. In a subsequent prosecution of the defendant for practicing medicine without a license, this woman testified that the defendant had treated her for bronchitis, the treatment consisting, among other things, of placing the patient on a cot and connecting "her body up with some kind of an electrical machine." The witness also testified that she paid the defendant $2 for the treatment. The defendant denied having received any money for his services but admitted that he gave the treatment and that he did not possess a license to practice medicine. From a verdict of guilty in the trial court, the defendant appealed to the court of criminal appeals of Texas.

The defendant contended, among other things, that the prosecution was the result of an entrapment. But, said, the court of criminal appeals, entrapment has been legally defined as "the seduction or improper inducement to commit a crime, and not the testing by trap, trickiness, or deceit of one suspected." It carries with it a presumption that the officer or agent manufactured the offense and then incited the accused into committing it for the purpose of prosecution. The evidence in this case, however, showed that the defendant, by virture of the sign in front of his house, held himself out to the public as a chiropractor willing to accept patients. The woman who applied for treatment was actually suffering from bronchitis. She did not know that the defendant was violating the law and knew nothing of the investigator's connection with the board of medical examiners or of his motive in referring her to the defendant and paying for her treatment. The gist of the charge against the defendant was that he practiced medicine without a license. This offense was clearly proved, in the opinion of the court, and merely furnishing money to a person and telling her to go to the defendant for treatment did not constitute entrapment. The defendant's conviction was therefore sustained. —*Peery v. State, 134 S. W. (2d) 283 (Texas, 1939).*

Malpractice: Right of Physician to Restrict Area of Practice.—The defendants were associated in the practice of medicine. They limited the area of their practice by customarily refusing to accept or treat a patient residing more than 8 miles from the locality in which their office was located. A woman sustained a severe cut on her leg and was taken to the defendants' office, where proper treatment was administered. The patient was told to return to the office the following day. This she did not do. On the contrary, she and her husband decided to go to a community 20 miles distant to the home of the husband's brother. The condition of the patient's leg became worse and the husband telephoned the defendants several times. At first certain home treatments were suggested but later, on being requested to make the 20 mile trip to see the patient, the defendants suggested that the services of another, more conveniently located physician be obtained. One of the defendants made arrangements for another physician to see the patient but before this physician could respond to the call the husband had made other arrangements. The wound on the patient's leg became infected and she was removed to a hospital, where she remained, seriously ill, for about three months. Subsequently the patient and her husband sued the defendants, contending, among other things, that the defendants failed in their duty to the patient by refusing to make the 20 mile trip to continue treatments. From a judgment for the defendants, the plaintiffs appealed to the district court of appeal, fourth district, California.

The relation of physician and patient, said the court, is in its inception created by contract, express or implied. The contract may be general or may be limited by special terms. When general, the physician may undertake the treatment of the patient during the course of an illness wherever the patient may be, but a physician is under no obligation to enter into such contract. He may limit his obligation to undertaking to treat the patient only for a certain ailment or injury at a certain place and at a specified time. When he so limits his employment the physician is not required to treat the patient at another place or to follow him into another city. In speaking of a contract of employment of a physician it was said in *Roos* v. *Jansen*, 30 Cal. App. Supp. 2d 773, 78 P. (2d) 476: "In the absence of a special agreement as to the place where a contract is to be performed, it is to be deemed performable at the creditor's place of business . . . or, in the absence of a contrary showing, a contract is to be deemed performable where it is made." The plaintiffs in the present case complained of instructions given by the trial court which in effect told the jury that as the contract to treat the patient was made in the community in which the office of the defendants was located it followed that it was to be performed there and that in the absence of proof of a contract to treat her elsewhere or general contract for treatment until she was cured, there was no obligation on the part of the defendants to follow her to the community to which she moved. One of the defenses interposed by the defendants was that the contract of employment was special and limited to the treatment of the patient in the office of the defendants. There was, the court said, considerable evidence admitted in support of this defense, and the defendants were entitled to proper instructions on this phase of the case.

It is well settled in California, continued the court, that physicians are required only, in treating a patient, to possess and use the ordinary training, skill and care of other ordinarily prudent, careful and skilful physicians practicing in the same or similar communities. It is equally well settled that the standards of practice in a community can be established only by the testimony of experts. No physician, other than the defendants, who was familiar with the standards of practice in the community in which the treatment was given testified in this case, and the defendants were not interrogated on this subject. The plaintiffs produced two physicians as witnesses who had never practiced in that community and knew nothing of the standards of practice there. Neither did they know that the two communities involved in this case were similar or had similar standards of practice. Over the objections of the defendants they were permitted to testify as to the standards of practice in the community to which the patient moved. They were not able to testify that the same standards prevailed in the defendants' community. It was clear to the court that this evidence was incompetent for any purpose. It should not have been received, for it did not prove that the defendants failed to use due care in treating the patient. Without proof of the lack of such due care, the plaintiffs made out no case.

The court could find no error in the record and therefore affirmed the judgment for the defendants. —*McNamara v. Emmons, 97 P. (2d) 503 (Calif., 1939).*

Society Proceedings

COMING MEETINGS

American Association on Mental Deficiency, Salt Lake City, June 20-24. Dr. E. Arthur Whitney, Washington Road, Elwyn, Pa., Secretary.

American Physiotherapy Association, Asilomar, Calif., July 13-18. Miss Evelyn Anderson, Stanford University, Calif., Secretary.

Maine Medical Association, York Harbor, June 22-24. Dr. Frederick R. Carter, 22 Arsenal St., Portland, Secretary.

Montana, Medical Association of, Great Falls, June 24-26. Dr. Thomas F. Walker, 206 Medical Arts Bldg., Great Falls, Secretary.

Pacific Northwest Medical Association, Spokane, Wash., June 25-28. Dr. C. W. Countryman, 407 Riverside Ave., Spokane, Wash., Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1931 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

61:427-668 (March) 1941

*Epidemic Diarrhea of Newborn: I. Clinicoepidemic, Pathologic and Therapeutic Aspects. G. M. Lyon and T. G. Folsom, Huntington, W. Va.—p. 427.

Granulocytopenia: Report of Three Cases in Which Condition Was Due to Infection and in Which Chemotherapy Was Employed. P. S. Strong, New York.—p. 445.

Enlargement of Thyroid Gland in Juvenile Patients with Diabetes Mellitus: Incidence of Diabetes and Thyroid Disease in the Family. M. M. Steiner and A. L. Newcomb, Chicago.—p. 458.

Development of Center for Cuboid Bone in Newborn Infants: Roentgenographic Study. A. U. Christie, San Francisco; Ethel C. Dunham and Rachel M. Jenss, Washington, D. C., and A. L. Dippel, Minneapolis.—p. 471.

*Encephalitis Complicating Measles: Report on 241 Cases Collected from Literature and Forty-Four Additional Cases. P. M. Hamilton, San Marino, Calif., and R. J. Hanna, Los Angeles.—p. 483.

Relation of Dental Caries in City Children to Sex, Age and Environment. B. R. East, New York.—p. 494.

Attempts to Sensitize Monkeys to Scarlet Fever Antitoxin. J. A. Toomey, W. P. Garver and W. S. Takacs, Cleveland.—p. 518.

Respiratory Metabolism in Infancy and in Childhood: XXIV. Daily Water Exchange of Premature Infants. H. H. Gordon, S. Z. Levine, H. McNamara, E. Marples and H. R. Benjamin, New York.—p. 524.

Primary Tuberculous Infections in Young Adult Life and in Childhood, with Reference to Their Relative Advantages and Disadvantages. A. Wallgren, Göteborg, Sweden.—p. 577.

Osteitis Fibrosa Cystica (Albright). J. L. Neller, Eau Claire, Wis.—p. 590.

Epidemic Diarrhea of Newborn.—Lyon and Folsom discuss the epidemic of diarrhea of the newborn which occurred during August 1938 in the nursery of a general hospital, the third since its opening in 1924. The December 1926 and October 1934 epidemics were carefully studied for the usual dysentery bacilli, but none were isolated. The 1938 epidemic appeared similar in every respect to the first two, except that more infants were involved and that it was more severe. The authors believe that there is a difference between bacillary dysentery of the newborn and the diarrhea of the three epidemics. The term "epidemic diarrhea of the newborn" as used by them connotes the same clinical and epidemiologic picture of the highly fatal diarrhea of the newborn described by Rice, Best, Frant and Abramson. After the sudden death of the first infant, successive cases occurred, so that of the 21 newborn possibly exposed, only 6 escaped. Of these 2 left the hospital soon after the epidemic began, and 2 born after isolation measures were instituted were kept away from the nursery and were removed within forty-eight hours to their homes. While the infants had diarrhea (frequent, small, thin stools), it was not of the voluminous watery type which rapidly dehydrates older infants suffering from infectious diarrheas. The first few loose stools were watery, but thereafter they were consistently small in amount, although their number ranged from ten to thirty a day. After the first twenty-four to forty-eight hours they were generally small spots of mucus with some yellowish or greenish discoloration. In most of the infants a distinct redness, with injection, of the mucous membranes of the oropharynx and of the conjunctivas was observed. Only the first infant had any purulent discharge from the nose or throat. After twenty-four to forty-eight hours of moderate and not excessively dehydrating looseness of the stool the more severely affected infants became suddenly and acutely prostrated, had high temperatures (103 F. or higher) and lost from 8 to 12 ounces (227 to 340 Gm.) in weight. The symptoms were not primarily of respiratory or intestinal difficulties but of intracranial involvement. Postmortem examination of 3 of the next 8 newborn infants to become acutely ill revealed severe generalized edema of the brain. This was undoubtedly the most important pathologic observation. The entire brain appeared to have been affected by a severe toxin or by an active neurotropic virus. A tendency to pinpoint hemorrhage was observed in the brain and most of the other organs, especially of central nervous system tissue. The mucosa of the large and small intestine of 2 infants was markedly denuded. There were no membranes or mucous casts; the appearance of the mucosa of 1 infant suggested a catarrhal infection. The atony of the intestine was remarkable. The mesenteric glands were moderately enlarged and hyperplastic. There were numerous minute hemorrhages beneath the mucosa. Microscopically there was no cellular infiltration of the mucosa or serosa. There was no evidence of bacterial life or invasion. Cultures for the usual pathogenic enteric organisms were negative. Of 16 infants attacked, 5 died. Of the 11 who recovered, the illness of 5 was severe, of 2 moderately severe and of 4 mild. There was an unusual prevalence of clinical influenzal infections within the community during all three epidemics. That the malady is an expression of infection with influenza virus in the newborn is suggested but not proved. Citrated whole blood from a patient recently convalescent from influenza seemed to be beneficial to 3 of the most severely ill infants. Normal adult blood given to 3 patients had no such effect. Clinical observations suggest that a mother may be infected by her own ill infant and that her response to the infection may be a clinical influenza. Whatever the infective agent, its rapid passage through the physiologically and immunologically immature newborn infant makes it likely that an infective agent relatively common among the general population may be so enhanced in virulence as to produce "epidemic diarrhea of the newborn." Such cases may occur individually and go unrecognized because of their distracting symptoms. The authors suggest that the disease is not new and that previously it was probably confused with true primary infection of the gastrointestinal tract. Since the preparation of the article, Lyon has encountered 2 newborn infants, delivered in relatively remote rural homes, who died of what appeared to be the same clinical picture of diarrhea, fever and symptoms referable to the central nervous system.

Encephalitis Complicating Measles.—Hamilton and Hanna correlate data from 241 cases of encephalitis complicating measles that have been reported by 110 workers and the 44 additional cases observed by them. Either the incidence of the complication is increasing or the disease is more generally recognized. Its pathogenesis is not known. The severity of the infection, the age, the sex, the race or body type of the patient, the season and other factors appear to have no bearing. The pathologic changes are mostly of vascular origin. Hyperemia, engorgement and hemorrhage are seen in the meninges, the spinal cord or the brain; the hemorrhages are usually petechial, the blood vessels have thickened walls and the perivascular regions show, by special staining technics, the proliferated cells to be largely microglial cells. The age incidence parallels that of measles; more than one half of the cases occur between the ages of 2 and 8 years. The encephalitis may precede the measles rash, occur with it or appear at varying periods after it. In the authors' cases it always appeared after (average two and seven-tenths days) the rash save in 1 instance, in which symptoms began five days before the rash. Onset prior to the rash is not usual; it occurred in 16 of the previously reported cases. Symptoms vary according to the severity of the involvement and the portion of the nervous system attacked. The sensorium and cranial peripheral, visceral and sensory nerves can be affected. Fever is usual though not invariable. The cranial nerves are more commonly affected than the peripheral nerves. Signs of meningeal irritation are common. The most common single sign is stiffness of the neck, and next in frequency is Kernig's sign. Laboratory data differ widely. The prognosis of any individual case is uncertain, as the disease may progress, regress or remain stationary. Hyperpyrexia of rapid onset with constant increase was present in about half of the fatal cases; progressive bulbar paralysis was also a serious symptom. Very young patients seem to have the poorer prognosis; otherwise the age incidence of mortality closely parallels that of the disease. The prognosis for sequelae is also uncer-

tain. Any of the neurologic symptoms may become permanent or may persist for a long time before recovery ensues. Residual symptoms do not seem especially likely in patients with a severe acute phase of the illness. Severe paralysis or paresis tends to remain in about 10 per cent and convulsive states and choreiform or athetoid movements in about 5 per cent of the patients. In general, of 10 patients 4 will recover completely, 2 will die and 4 will have one or more major or minor debilitating residual symptoms. Therapy other than symptomatic is variable and unsatisfactory. The authors have had some encouraging results with shock treatment. Of 16 patients treated 3 recovered completely within seventy-two hours, 2 recovered within one week, 1 in two weeks, 1 in three weeks, 2 in from four to six weeks, 4 could not be followed satisfactorily, 2 recovered with residual symptoms and 1 died. Of 18 patients given symptomatic treatment 3 made rapid, uneventful recoveries within seventy-two hours with no residual symptoms, 4 attained complete recovery in one week, 1 in two weeks, 2 in more than two weeks, 1 left the hospital against advice with no improvement at the end of a week, 2 left the hospital with paresis of the extremities and 5 died. The remaining 10 patients received one or more of the following: convalescent measles serum, human convalescent poliomyelitis serum and immunotransfusion; 4 of them recovered without residual symptoms in one week, 1 recovered completely in six weeks and 5 died. There were 47 deaths among the 241 cases collected from the literature.

American J. Digestive Diseases, Huntington, Ind.

8:65-100 (March) 1941

Carcinoma of Head of Pancreas: Review of Forty Cases. S. C. Franco, Brooklyn.—p. 65.
Gastric Diverticula. N. E. Reich, Brooklyn.—p. 70.
Study of Movements of Duodenum, with Special Reference to Antiperistalsis. P. M. Mecray Jr., Rochester, Minn.—p. 76.
Studies on Secretion of Acid Following Procedures on Distal End of Stomach. J. H. Grindlay, Rochester, Minn.—p. 82.
Role of Small Intestine During Emesis. M. J. Oppenheimer, Philadelphia, and F. C. Mann, Rochester, Minn.—p. 86.
Influence of Cathartics on Activity of Small Intestine. M. J. Oppenheimer, Philadelphia, and F. C. Mann, Rochester, Minn.—p. 90.

American Journal of Medical Sciences, Philadelphia

201:313-468 (March) 1941

Observations on Clinical and Functional Course of Nephrotoxic Nephritis in Dogs. P. J. Fouts, A. C. Corcoran and I. H. Page, Indianapolis.—p. 313.
Influence of Liver Damage on Plasma Prothrombin Concentration and Response to Vitamin K. S. P. Lucia and P. M. Aggeler, San Francisco.—p. 326.
Some Bacteriologic Observations on Pneumonia. M. M. Bracken, Pittsburgh.—p. 340.
*Vitamin E in Treatment of Fibrositis. C. L. Steinberg, Rochester, N. Y.—p. 347.
QRS Complex in Precordial Leads in Anterior Wall Infarction: True and False Infarction Curves. V. Mortensen, Copenhagen, Denmark.—p. 349.
Absorption, Excretion and Distribution of Sulfadiazine (2-Sulfanilamidopyrimidine). O. L. Peterson, E. Strauss, F. H. L. Taylor and M. Finland, Boston.—p. 357.
Comparison of Mortality in Pneumococcic Pneumonia Treated by Hydroxyethylapocupreine and by Sulfapyridine. W. W. G. Maclachlan, J. M. Johnston, M. M. Bracken and L. S. Pierce, Pittsburgh.—p. 367.
Use of Syntropan in Parkinsonism. N. S. Schlezinger and B. J. Alpers, Philadelphia.—p. 374.
Pellagra and Porphyrinuria. R. Kark and A. P. Meiklejohn, Boston.—p. 380.
Renal Function in Late Toxemia of Pregnancy. A. C. Corcoran and I. H. Page, Indianapolis.—p 385.
Action of Paredrinol After Induction of Hemorrhage and Circulatory Collapse. E. A. Stead Jr. and R. V. Ebert, Boston.—p. 396.
*Clinical Importance of Small Intracutaneous Veins in Human Chest. J. B. Burrett and D. Scherf, New York.—p. 399.
Leukopenia in Negro Workmen. W. H. Forbes, R. E. Johnson and F. Consolazio, Boston.—p. 407.
Mural Thrombi in Heart as Source of Emboli. C. F. Garvin, Cleveland.—p. 412.
Apoplexy Apparently Precipitated by Low Blood Pressure. A. D. Ecker and M. Deren, Syracuse, N. Y.—p. 415.

Vitamin E in Treatment of Fibrositis.—Steinberg gave from 2 to 8 cc. of wheat germ oil daily to 82 patients with various disorders. Thirty patients with primary fibrositis were treated with vitamin E in doses of from 2 to 8 cc. daily and all were completely relieved of symptoms. Two of this group obtained only mild relief after taking 3 cc. of wheat germ daily for four weeks. They were then given a vitamin E molecular distillate containing 120 mg. of naturally occurring alpha-tocopherol daily, and after one week of such therapy they were completely relieved. Of 20 patients with atrophic arthritis with secondary fibrositis given from 2 to 8 cc. of wheat germ daily for from two to four months, 8 noticed definite improvement in muscle soreness and stiffness and 12 experienced no relief. Twenty patients with hypertrophic arthritis with secondary fibrositis were given from 2 to 6 cc. of wheat germ daily for from two to six months and none noticed improvement in the soft tissue structures. Of the 12 remaining patients, 1 with gout was given 4 cc. of wheat germ daily for four weeks without relief from the extreme muscle soreness, 3 with sciatica of unknown cause were given 4 cc. for four weeks without relief and 8 with "psychosomatic rheumatism" received wheat germ oil for from two to three months without relief. These were all later relieved by barbiturate or bromide therapy. The studies tend to indicate that primary fibrositis may be a metabolic rather than an infectious process.

Small Intracutaneous Veins in Chest.—In examining 385 patients for the presence of ectasia of small intracutaneous veins in the region of the pleural sinuses, Burrett and Scherf found that they are not the result of pulmonary, pleural or cardiac disease. They are found in healthy people and their incidence increases with age. The 385 patients represented miscellaneous clinical material and were unselected, but the group intentionally included many instances of pulmonary and cardiac disease because of the supposed relationship of such veins to these conditions. Ectasia of only intracutaneous veins, more or less dendritically arranged, at the level of the pleural sinuses or round the last cervical and first to fifth dorsal vertebral spines was looked for. Such veins were present in 261 (67.7 per cent) of the 385 patients examined. Their incidence definitely increased among older subjects. Among 29 patients less than 20 years of age the veins were present in 14 (48.2 per cent), while they were observed in 46 (76.6 per cent) of 60 subjects 60 or more years of age. These veins were present in only 28 (51.8 per cent) of 54 patients with pulmonary disease (tuberculosis, emphysema and bronchitis). Among 94 decompensated cardiac patients examined (coronary sclerosis, rheumatic heart disease, syphilitic aortitis and hypertension) the veins were detected in 66 (70.2 per cent). Of 35 patients with visible pleural adhesions on fluoroscopic examination 10 (20.8 per cent) failed to exhibit superficial chest veins, in 6 the veins were present only on the side opposite to the adhesions and in 5 they were more prominent on the side of the adhesions. Among 137 patients with diabetes, peptic ulcer and other diseases but without demonstrable pulmonary or cardiac disease the veins were detected in 95. Among 261 positive cases, they were bilateral in the region of the phrenicocostal sinus in 103 (39.5 per cent). The study shows that the phlebectases follow the borders of the pleural sinus, are more definitely in evidence at the lower anterior pulmonary margin and are most common on the left side. In 155 of 246 patients displaying veins anteriorly, fluoroscopic study revealed that these structures were located exactly at the attachment of the diaphragm. There was no relation to this muscle in 5. Whenever the veins were above or below the contact area, a definite reason for the exception was found. For example, they were above in patients whose diaphragms were low or horizontal (enteroptosis, pulmonary emphysema) and below when the skin had been stretched by large pendulous breasts or a recent marked reduction of weight had occurred. The author offers the following explanation for the developmental mechanism of these veins. Any sudden physical exertion such as running up a flight of stairs, cough, pressure during defecation, even bending, causes increased intrathoracic pressure. The transmission of this increased pressure may be prevented in some areas by venous valves. The fact that these veins are more or less limited to the borders of the pleural sinuses may be due to a special arrangement of the veins and their communication with the superficial vessels at these locations. The available knowledge concerning intrathoracic pres-

sures at different areas under normal and abnormal conditions is meager. The fact that bullae in advanced emphysema usually occur at the apexes, the anterior margin of the lung and at the bases, that is, at the same sites at which the "pleural sinus veins" appear, may be the result of a special elevation of pressure in these areas during cough or pressure. The author believes that knowledge of the existence of these structures, their high incidence and their exact location may have some importance, as they readily indicate the site of the pleural sinuses; this may aid in the differential diagnosis of some intrathoracic diseases.

American J. Orthodontics and Oral Surgery, St. Louis

27:125-168 Orthodontics (March) 1941

125-168 Oral Surgery

Orthodontics

Southwestern Society of Orthodontists. G. C. Turner, Lubbock, Texas.—p. 125.
Some Metallurgic Aspects of Orthodontic Materials. A. S. Rose, Buffalo.—p. 127.
Coordination of Otolaryngology and Orthodontics. F. B. Malone, Lubbock, Texas.—p. 142.
Dental Preparation of Aspirants to the United States Military Academy. W. H. Day, Washington, D. C.—p. 147.
Easy and Inexpensive Method of Making Hawley Retainers. W. B. Stevenson, Amarillo, Texas.—p. 154.

Oral Surgery

Lesions of Oral Mucosa Treated with Specific Vitamins. D. Weisberger, Boston.—p. 125.
Lymphangiomas of Tongue. J. P. Rigg and R. Waldapfel, Grand Junction, Colo.—p. 128.
Elimination of Pyorrheal Pocket by Electrosurgery. W. I. Ogus, Washington, D. C.—p. 135.
The Future of the Pulpless Tooth. L. I. Grossman, Philadelphia.—p. 145.
*Relationship of Arthritis to Oral Diagnosis, Defocalization and Streptococcus Vaccine Therapy. M. Shuster, New York.—p. 149.

Relationship of Arthritis to Oral Infection.—Shuster points out that in recent years the focal infection theory of chronic arthritis has been the target of much criticism. The results of defocalization have not always lived up to expectation, and some workers do not advise dependence on this treatment in such joint conditions. The author believes this view is based on a misconception of the theory. That such treatment deserves an important place in the therapy of chronic infectious arthritis is shown by his results obtained in 785 patients treated by defocalization. Of 468 persons with arthritis for less than six months the teeth of 366 were removed and 150 of these were improved, the tonsils of 78 were removed and 39 were improved, and of the 24 patients who had sinus surgery 3 improved. Of the 317 remaining patients with arthritis for more than two years 43 of 215 were improved following the removal of teeth, 21 of 84 after tonsillectomies and 1 of 18 after their sinuses were drained. These figures indicate the advantage of early focal surgery. The removal of foci in the early cases was approximately twice as effective as in the late stages of the disease. Some of the reasons which may be responsible for the failure of focal surgery are: 1. Not every infected tooth or tonsil is the cause of the focal infection. 2. Secondary foci may be present if the focal infection is of long duration. Thus even if the primary focus is removed infection may still be present in inaccessible areas. Remembering the frequency of secondary foci of infection the surgeon should, if possible, prepare a vaccine from the enucleated focus. 3. Not infrequently the infected focus is incompletely removed and focal infection continues. When teeth or tonsils are removed, fragments and surrounding infected areas may be left. 4. If the removal of infected foci is postponed too long it can scarcely be expected to effect improvement in terminal stages of the disease. 5. Surgery may activate a walled-off focus, and such incidental trauma may promote the development of secondary foci. The spectacular instances of recovery after focal surgery may blind one to the fact that not all patients are benefited and that some are even harmed. It is not fully realized that trauma to an infected focus may result in dissemination of its bacterial products. Even irritation of a focus may cause a systemic invasion. Bacteremia is often seen after defocalization. Septicemia and subacute bacterial endocarditis occur too frequently to be disregarded. Subacute bacterial endocarditis after defocalization in patients with a history of rheumatic heart disease must always be kept in mind. In spite of such complications the author still believes that except in cases of rheumatic heart disease foci should be removed as early as is compatible with safety. In chronic infectious arthritis surgery should always be delayed in leukopenia, pronounced shift to the left of leukocytes, absence of blood complement and in an acutely infected focus. A short course of streptococcus vaccine reduces the incidence of exacerbations after defocalization. The statement that streptococcus vaccine has failed in the treatment of chronic infectious arthritis should not be accepted before some of the reasons for failure are analyzed. 1. Vaccines are often prepared from noninfecting or nonetiologic foci. 2. The autogenous vaccine prepared often consists only of the predominant strain, and such a strain may be nonpathogenic. 3. Stock streptococcus vaccines have often been employed. Most bacteriologists agree that stock vaccines are no better than nonspecific therapy. 4. Vaccine therapy is sometimes begun too late in the stage of the arthritis when the symptoms are not due to infection but to articular derangement. 5. Dependence should not be placed on vaccine therapy alone: orthopedics, physical therapy, massage and corrective exercises are indicated. 6. Vaccine therapy is often discontinued too soon. 7. Improper dosage is often responsible for poor results. Experience has shown that small doses are effective. The author has used streptococcus vaccine for chronic arthritis for the last sixteen years. It should not be used to the exclusion of other recognized measures, but he feels that even if vaccine therapy does not cure arthritis it at least checks the infection. However, unless infected foci are removed reinfection will frequently occur.

American Review of Tuberculosis, New York

43:319-448 (March) 1941

*Oleothorax: New Evaluation with Review of 101 Cases. R. H. Browning, C. C. Dundon and E. S. Ray, Warrensville, Ohio.—p. 319.
Respiratory Reserve Before and After Thoracoplasty. G. F. Piltz, T. De Cecio, W. Chapman and B. P. Potter, Jersey City, N. J.—p. 338.
Tuberculosis in the Jewish Diabetic. A. Rest, Spivak, Colo.—p. 344.
Decline in Mortality from Respiratory Tuberculosis Among Young Adults. G. P. Wright and P. D. Hart, London, England.—p. 357.
Sanatorium in the New Jersey Tuberculosis Program: Ten Year Review. E. Frankel, Trenton, N. J.—p. 364.
Tuberculosis in Mental Hospitals. M. Pollak, Peoria, Ill.; A. V. Hummel and I. L. Turow, Bartonville, Ill.—p. 373.
Preventorium and Reinfection Type Tuberculosis. E. Friedman and Bernice W. Billings, Boston.—p. 383.
*Tuberculosis of Tonsils: Its Relation in Children with Tubercle Bacilli in Gastric Contents. E. Rosencrantz and S. Hurwitz, San Francisco.—p. 388.
Treatment with Solganal B Oleosum: Contribution to Question of Gold Therapy. F. Seligson, Glencliff, N. H.—p. 394.
Vitamin C in Experimental Tuberculosis. M. M. Steinbach and S. J. Klein, New York.—p. 403.
Effect of Vitamin C on Experimental Tuberculosis in Rabbit. M. M. Steinbach, S. J. Klein and C. J. Duca, New York.—p. 415.
Human Tuberculosis in a Bovine: Case Report of Spontaneous Infection in an Adult Bovine. W. H. Feldman and H. Moses, Rochester, Minn.—p. 418.

Oleothorax.—Browning and his associates review 101 consecutive cases of oleothorax instituted at Sunny Acres Sanatorium for disinfection (tuberculous empyema) or inhibition (obliterative pleurisy) purposes between December 1931 and July 1939. Since the induction of oleothorax the patients have been cared for in sanatoriums, outpatient clinics or by private physicians. Recent reports on their condition and work capacity have been obtained from all but 11 patients; 9 died and 2 could not be located. In the 48 empyema cases oleothorax was never induced when the patient was acutely ill or toxemic, and all but 1 had reached a relatively afebrile stage before the instillation of oil was begun. All persons studied had had oleothorax for at least six months, and the longest period of treatment was more than eighty-four months. Success was attained within a period of twelve months in 36 (75 per cent) of the 48 patients; the result in the remaining 12 patients was considered a failure because of persistent purulent fluid. In addition to the surprisingly prompt cessation of fluid formation in many cases, improvement in the patients' general condition was a prominent feature. In the successful cases, low grade fevers disappeared, malaise was less, appetites improved and weight gains were common. Of the original successes 33

patients still had a satisfactory oleothorax result at the time of this study. The work capacity of 18 of these patients is either full or part time. Among the 53 patients with obliterative pleurisy 44 had had gross, serous effusion during pneumothorax therapy and 24 were still forming fluid when oleothorax was induced. As in the empyema group, all the patients had been treated with oleothorax for at least six months when the study was made. The treatment was successful in 46 of the group during the first six months and in 1 at eighteen months. Of the failures, 3 formed purulent fluid persistently, bronchopleural fistula developed in 2 and a pleurocutaneous fistula in 1. At the end of the study complications developed in 5; therefore the final tabulation shows 42 successes. The average duration of oleothorax in the successful group was thirty months, and 15 of these patients are doing full time work. Seven of these 15 have had oleothorax for more than five years. Ten patients are able to work part time, 11 are unable to work, 3 are still under treatment, 2 are dead and 1 could not be traced. A further study of the 26 patients in whom oleothorax was not successful shows that there is a definite correlation between positive sputum and the results of oleothorax treatment. In only 7 of 15 with a positive sputum was oleothorax successful as contrasted with 67 of 85 patients with negative sputums. An additional group of 21 patients with extrapleural pneumothorax had oleothorax for from five to fifteen months, with an average of ten and one half months. Serous or purulent fluid was forming in 13 when oleothorax was started. After one month, fluid formation had stopped in all but 4, and at the time of the study pus continued to form in only 1 after fourteen months of oil blockade. The results are satisfactory in 17 of the 21 patients, 1 patient died from other causes although oleothorax was successful, the lung of 1 reexpanded and the pocket was lost, a bronchopleural fistula developed in 1 after one month and a thoracoplasty is being done, and 1 patient had a persistent cavity because of insufficient collapse and left the hospital without approval after three months of oleothorax.

Tuberculosis of Tonsils.—Rosencrantz and Hurwitz determined the frequency of positive gastric contents associated with tuberculous tonsils. The material for their study consists of 103 female children from 8 months to 13 years of age admitted to the University of California Tuberculosis Service during the last five years. In each case the Mantoux test with 0.1 mg. of old tuberculin was positive. The gastric contents of each child were injected into a guinea pig. A roentgenogram was taken of each child. Many patients had hypertrophic tonsillitis and, when the general condition improved, tonsillectomy and adenectomy were done as indicated. The adenotonsillar tissue was studied microscopically. The pathologic lesions were either unilateral or bilateral and the tubercle formation was either discrete or confluent. Giant cell formation was common, but caseation was not a special feature. The surface epithelium of the tonsil was invariably intact. Tubercle bacilli were rarely demonstrated. In one case the adenoid tissue alone showed tuberculous involvement. There were 19 patients with tuberculosis of the tonsils. Their ages ranged from 16 months to 12 years. Clinical pulmonary tuberculosis was diagnosed in 8 patients and corroborated by roentgen study; hilar lymph node enlargement occurred in 9 patients and pleural effusion in 2. Cervical lymphadenitis was associated twice with hilar nodes, and in 1 of the latter patients an additional complication was bone tuberculosis. Of the 19 patients with tuberculous tonsils 18 had positive gastric contents as shown by guinea pig inoculation. The recovery following tonsillectomy was normal in every instance. The operation was deferred until the pulmonary lesion was quiescent and until the physical condition of the patient was generally improved. The tuberculous lesion in the tonsils was latent, and the indications for tonsillectomy were the same as in the nontuberculous child. The authors believe that removal of tuberculous tonsils will reduce absorption from tuberculous foci and perhaps offer a prophylactic measure against the development of tuberculous cervical adenitis. They suggest that children who harbor the organisms in the stomach have unconsciously coughed up and then swallowed the sputum. The mechanism of tonsillar infection remains unproved, in agreement with Long and his co-workers that probably all patients with pulmonary tuberculosis have tuberculous tonsils.

Annals of Internal Medicine, Lancaster, Pa.

14:1499-1740 (March) 1941

Clinical Manifestations of Nicotinic Acid and Riboflavin Deficiency (Pellagra). V. P. Sydenstricker, Augusta, Ga.—p. 1499.
Fundamental Principles in Adjustment Reactions of Organism to Anoxia. E. Gellhorn, Chicago.—p. 1518.
*Hemolytic Streptococcus Pneumonia and Empyema: Study of Fifty-Five Cases with Special Reference to Treatment. C. S. Keefer, Boston; L. A. Rantz, San Francisco, and C. H. Rammelkamp, Boston.—p. 1533.
Cerebral Manifestations of Bacterial Endocarditis. E. C. Toone Jr., Richmond, Va.—p. 1551.
Tuberculosis Among Students and Graduates of Medicine. J. A. Myers, H. S. Diehl, Ruth E. Boynton, Minneapolis; P. T. Y. Ch'iu, Peiping, China; T. L. Streukens and B. Trach, Minneapolis.—p. 1575.
*Intravenous Use of Sodium Sulfapyridine in Treatment of Lobar Pneumonia. C. W. Strickler Jr., A. P. McGinty and J. B. Peschau Jr., Atlanta, Ga.—p. 1595.
Phonocardiography and Its Clinical Correlation. H. Arenberg, New York.—p. 1607.
Problems of Acute Infections. J. H. Musser, New Orleans.—p. 1617.
Problem of Rheumatism and Arthritis: Review of American and English Literature for 1939 (Seventh Rheumatism Review). P. S. Hench, Rochester, Minn.; W. Bauer, Boston; M. H. Dawson, New York; F. Hall, Boston; W. P. Holbrook, Tucson, Ariz.; J. A. Key, St. Louis, and C. McEwen, New York.—p. 1631.

Hemolytic Streptococcus Pneumonia and Empyema.—Keefer and his associates analyzed 55 cases of hemolytic streptococcus pneumonia (39) and empyema (16) with regard to prognosis and treatment. Fourteen of the empyema cases followed pulmonary infection. The cases of pneumonia were primary, followed respiratory infection or were superimposed on a preexisting chronic pulmonary infection. The fatality rate in the 39 cases of pneumonia was 17 per cent. The unfavorable prognostic factors were age (i. e. more than 50 years of age), bacteremia and debilitating disease. The fatality rate for the patients with empyema was 18 per cent; there was only 1 death from empyema between the ages of 10 and 40 years. Bacteremia was present in 12 per cent of cases and it was more common in patients more than 50 years of age. The fatality rate in bacteremic cases was 57 per cent, whereas in the nonbacteremic cases it was only 7 per cent. Sulfanilamide or sulfapyridine did not reduce the incidence of empyema nor did it seem to shorten the course of the disease. There was suggestive evidence that the fatality rate among both the pneumonia and the empyema cases was reduced by using these drugs. Four patients with empyema recovered following multiple aspirations of the chest and chemotherapy. The best results were obtained with chemotherapy and thoracotomy.

Intravenous Sulfapyridine Sodium for Lobar Pneumonia.—Strickler and his co-workers report on the use of sodium sulfapyridine monohydrate intravenously in the treatment of 54 patients with lobar pneumonia. These patients were admitted to the Grady Memorial Hospital between Dec. 15, 1939 and March 16, 1940. The diagnosis was made from history, physical signs, laboratory studies, serial roentgenograms and postmortem observations. The routine dose of sulfapyridine sodium was 0.06 Gm. per kilogram of body weight repeated every six hours until the temperature became normal. The drug was dissolved in 750 cc. of physiologic solution of sodium chloride or in 5 per cent dextrose solution. The saline solution was used when vomiting occurred, otherwise dextrose solution was used. After the temperature dropped to normal, the same dose was given every eight hours for forty-eight hours and then every twelve hours for forty-eight hours, when the intravenous administration was discontinued and 1 or 0.5 Gm. of sulfapyridine was given orally every four hours. An equal amount of sodium bicarbonate was given by mouth with each dose of the two drugs. If the patient's response seemed unsatisfactory forty-eight hours after parenteral treatment was begun, type specific antiserum was administered. Thirty-two of the 54 patients were males and 22 females. Their ages varied from 13 to 84 years. The average age was 38 years, of the survivors 34 years and of the patients who died 64 years. The average number of days elapsing between the onset of the pneumonia and admission to the hospital was two and eighty-four one hundredths days, for the survivors two and eighty-two one hundredths days, and for the patients who died three days. There were 8 deaths, or a 14.8 per cent mortality. Of the 54 patients, 6 had a normal temperature within twenty-four hours

after the drug was first administered, 16 were afebrile within thirty-six hours, 10 within forty-eight hours and 5 within seventy-two hours. Of the 46 patients who recovered, 9 required more than seventy-two hours to reach the afebrile state. There was a spread of the pneumonic process in 1 of the patients who died and in 2 survivors. In the first the spread occurred after the drug had been discontinued because of tonic and clonic convulsions. The initial response of the infection was typical with crisis. Death was considered to be due to the toxic reaction from the drug. The first surviving patient had had an initial crisis within thirty-six hours and had been receiving 1 Gm. of sulfapyridine by mouth every four hours for six days. On the eleventh hospital day, while the free sulfapyridine in the blood was 3.3 mg. per hundred cubic centimeters, the pneumonia spread. Sulfapyridine sodium was again injected, but this time the response was by lysis. The other surviving patient was apparently well when sulfapyridine sodium was stopped on the tenth hospital day. The free sulfapyridine content was 2.6 mg. per hundred cubic centimeters of blood before the last injection. Sulfapyridine orally was begun with 0.5 Gm. every four hours. The next day the blood level of free sulfapyridine was too low to read. Pain over the contralateral lung, fever and signs of consolidation developed. Sulfapyridine was increased to 1 Gm. every four hours and the patient recovered by lysis. The drug of 11 surviving patients was discontinued because of hematuria, encephalopathy, rash or hemolytic anemia. Of these 6 recovered without further chemotherapy or specific antiserum. The other 5 were given type specific antiserum the day the drug was stopped or the following day. Antiserum was given to 3 patients while the drug was being continued: to 1 because of a very poor prognosis and to 2 because of leukopenia. The remaining 4 of the 12 patients who received antiserum were among the fatal group. The mortality rate of 14.8 per cent is not lower than that after oral administration of sulfapyridine. Complications of lobar pneumonia were not prevented by the intravenous administration of sulfapyridine sodium, and the toxic reactions were of about the same or of slightly greater frequency than those of patients receiving the drug orally.

Archives of Neurology and Psychiatry, Chicago

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Histologic Evidence of Damage to Brain in Monkeys Treated with Metrazol and Insulin. K. H. Finley and C. Brenner, Boston.—p. 403.
*Amphetamine Sulfate-Sodium Amytal Treatment of Schizophrenia. E. Davidoff, E. C. Reifenstein Jr. and G. L. Goodstone, Syracuse, N. Y.—p. 439.
Sweat Mechanism in Man: Study of Distribution of Sweat Fibers from Sympathetic Ganglions, Spinal Roots, Spinal Cord and Common Carotid Artery. O. R. Hyndman and J. Wolkin, Iowa City.—p. 446.
Neoplasm of Posterior Fossa Simulating Cerebral Vascular Disease: Report of Five Cases with Reference to Role of Medulla in Production of Arterial Hypertension. B. C. Meyer, Orangeburg, N. Y.—p. 468.
Metamorphopsia and Other Psychovisual Disturbances in Patient with Tumor of Brain. M. B. Bender and M. G. Kanzer, New York.—p. 481.
*Convulsive Seizures in Delirium Tremens. M. Rosenbaum, M. Lewis, P. Piker and D. Goldman, Cincinnati.—p. 486.
Cysticercosis of Brain: Report of Case with Operation. B. S. Ray, New York.—p. 494.
Chemistry of Anticonvulsant Drugs. T. J. Putnam, New York, and H. H. Merritt, Boston.—p. 505.
Differential Diagnosis of Hysterical Tremor. P. Schilder, New York.—p. 517.
Astrocytosis Arachnoideae Cerebelli: Rare Manifestation of von Recklinghausen's Neurofibromatosis. A. E. Walker, Chicago.—p. 520.
Danger of Subarachnoid Injection of Alcohol for Relief of Pain. R. A. Groff and F. H. Lewy, Philadelphia.—p. 533.

Amphetamine Sulfate-Sodium Amytal for Schizophrenia.—Davidoff and his associates treated 80 patients with catatonic, paranoid, hebephrenic or simple schizophrenia with sodium amytal and amphetamine sulfate. They compare the results of this therapy with that obtained in 500 patients with schizophrenia treated by other routine procedures, 50 patients with dementia praecox treated with sodium amytal alone, 30 patients with dementia praecox treated with amphetamine sulfate alone and 25 patients with manic-depressive psychosis treated by the combined amphetamine-amytal method. Of the 80 patients 29 were discharged to their homes. The psychosis of 51 was of less than two years' duration and 22 of these were discharged. In the remaining 29 the psychosis was of more than two years' duration and of these only 7 were returned to their homes. The most favorable results were obtained in the group with early catatonia, in which 15 of the 27 patients were discharged. In the group with more prolonged catatonia, improvement was observed in only 1 of 6 patients. Poor results were obtained in the paranoid and the hebephrenic group irrespective of the duration of the disease. Regardless of the length of the psychosis 5 of the 10 patients with simple dementia praecox reacted favorably. Of the 500 schizophrenic patients admitted consecutively from 1931 to 1936 and treated by routine methods only 20.6 per cent were discharged to their homes, as compared with 36 per cent of patients treated with amphetamine and amytal, and likewise 26 per cent of the control patients ill less than two years and 14 per cent ill more than two years as compared with 43 and 24 per cent, respectively, of those receiving combined therapy. The greatest difference was shown among patients with the catatonic type of disorder of less than two years' duration, the percentages being 23 for the control patients and 56 for those receiving the amphetamine-amytal treatment. Of the 50 patients treated with amytal narcosis alone, only 30 per cent were discharged to their homes. Twelve, or 40 per cent, of the 30 catatonic patients receiving amphetamine sulfate therapy alone were discharged to their homes, and of the 25 manic-depressive patients receiving amphetamine sulfate-sodium amytal therapy 13 were returned to their homes.

Convulsive Seizures in Delirium Tremens.—Among 305 active cases of delirium tremens there were, according to Rosenbaum and his co-workers, 29 who had convulsions. Except for the convulsion the clinical picture of these patients on admission was similar to that of the patients who had no convulsions. All 29 patients recovered. All but 1 had a history of many years of alcoholism before the onset of convulsions. The average age at onset was 39 years. There was a history of injury to the head in 34 per cent as compared with that of 8 per cent in those with no convulsions. Air encephalograms were made of 7 patients, and evidence of cortical atrophy and ventricular dilatation was obtained in all of them. None of the 29 patients had syphilis of the central nervous system or focal neurologic disease. Successive electroencephalographic tracings of 1 patient after ingestion of whisky revealed abnormal waves which became progressively exaggerated and spread to all parts of the cerebral cortex. However, no convulsions resulted. The finding that 9 per cent of the 305 patients with delirium tremens have convulsions coincides with the statement by Lennox and his associates that 10 per cent of the population has a cerebral dysrhythmia which may represent a predisposition to convulsions. The authors suggest that the following factors may cause convulsions to appear in delirium tremens: (1) a constitutional predisposition to fits, (2) cerebral lesions (injury to the head and alcoholic damage to the brain), (3) acute cerebral lesions and severe metabolic strains resulting from delirium tremens and (4) the exaggerating effect of alcohol on existing abnormalities in the brain waves.

California and Western Medicine, San Francisco

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Evaluation of Newer Therapy in Pneumonias. R. E. Thomas, Los Angeles.—p. 106.
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Poison Oak and Poison Ivy Immunity Studies in Guinea Pigs. E. K. Stratton, San Francisco.—p. 115.
Pentobarbital Sodium, Nembutal, in Obstetric Analgesia. Gwendolyn Campion, San Francisco.—p. 116.
Pediatrics: Its Broader Aspects. O. Reiss, Los Angeles.—p. 119.
*Epidermophytosis Treated with Sodium Borate. A. E. Ingels, San Francisco.—p. 120.
Premature Obstetric Delivery Due to Poliomyelitis, with Respiratory Paralysis Complication. N. M. Spishakoff, D. Golenternek, Los Angeles, and A. G. Bower, Glendale.—p. 121.

Epidermophytosis Treated with Sodium Borate.—Ingels used sodium borate in powder form and soaks for the treatment of 202 cases of epidermophytosis of the feet, groins, axilla, anus and body. The powder was made up with 20 per cent aluminum silicate (kaolin) and 10 per cent magnesium carbonate for hygroscopic effect and also in a talcum base.

The soaks were administered in the form of 2 per cent foot or sitz baths. In a few cases of epidermophytosis of the trunk, sodium borate was used in an average of 1 cup to a tubful of water, with soaks once a day for ten minutes. The time for cure varied with the various sites, depending on moisture, friction and other mechanical factors. The dry, scaly type with the vesicular element responded best. Of the 202 patients with the typical dry or average vesicular involvement 138 were believed cured after an average healing time of seventeen days for those with uncomplicated foot involvement; 64 patients were greatly improved when last seen but did not return for a check-up. The average healing time for the groin, anal region and axilla were much longer. None of the patients showed dermatitis venenata, and no irritation was encountered. Generally the patients stated a beneficial effect on their itching symptoms. The raw, weeping and denuded type has not been included in the series. In such cases the method should be applied with extreme caution and only by an experienced dermatologist.

Cancer Research, Philadelphia

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Journal of Allergy, St. Louis

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Precipitins in Serums of Patients with Clinical Allergy: Preliminary Report. M. B. Cohen and R. R. Weller, Cleveland.—p. 242.
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Spontaneous Allergy (Atopy) in Lower Animal: Seasonal Hay Fever (Fall Type) in Dog. F. W. Wittich, Minneapolis.—p. 247.
Cutaneous and Systemic Reactions Observed During Oral Poison Ivy Therapy. B. Shelmire, Dallas, Texas.—p. 252.
*Allergy in Childhood: IV. Does Heredity Determine Age of Onset? B. Ratner, D. E. Silberman and Janet E. Greenburgh, New York.—p. 272.
Experimental Reproduction of Respiratory Mold Allergy. L. H. Harris, Elyria, Ohio.—p. 279.
Sensitivity to Gum Acacia: Report of Ten Cases of Asthma in Printers. C. B. Bohner, Indianapolis; J. M. Sheldon and J. W. Trenis, Ann Arbor, Mich.—p. 290.
Generalized Allergic Reactions to Insulin: Review of Literature, with Report of Case. E. Yasuna, Boston.—p. 295.
Atmospheric Allergens in Alaska. O. C. Durham, North Chicago, Ill.—p. 307.

Allergy, Heredity and Age of Onset.—Ratner and his colleagues determined the presence or absence of a hereditary taint in 250 allergic children from 1 to 10 years of age. The period of maximal liability was the first five years of life. In the first year there was a slightly greater number (56 per cent) of cases occurring in the group with a taint on both sides (bilateral), and the group with no hereditary taint (negative) was slightly larger (48 per cent) than the group with a one-sided taint (46 per cent), that is the unilateral group. In the 2 to 5 year group the preponderance occurred in the unilateral and negative groups, and the bilateral group showed the smallest number. Between the sixth and eighth years the bilateral and the negative groups were both larger than the unilateral group. Therefore no evidence of a hereditary influence was seen among this group of children. It appears that, when children alone are the subject of a study, the absence or presence of allergy in other members of the family appears to have little influence on the age at which allergic symptoms manifest themselves. The preponderance of hay fever cases in data pertaining to adults has led to the impression that in patients with negative histories the onset is at a later age. Actually the onset of hay fever is later, and such patients present a lower incidence of positive family histories. Other clinical forms may also occur at any period, but from their data the authors find that eczema occurs earliest; the average age of onset of asthma and urticaria is intermediate. Persons with

an onset after puberty are usually hay fever sufferers. The difference in the age at which allergic syndromes ensue is more likely caused by variations in the type of the allergen and allergic syndrome rather than by genetic differences.

Journal of Immunology, Baltimore

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Military Surgeon, Washington, D. C.

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Coccidiodal Granuloma: Brief Review with Report of Case of Meningeal Involvement. W. M. Craig and M. B. Dockerty, Rochester.—p. 150.

Anatomy, Physiology and Surgery in Duodenal Stasis. F. C. Schuldt, St. Paul.—p. 155.

Report on Progress in Adrenal Therapy. J. L. McLeod, Grand Rapids. —p. 159.

Incisional Hernia and Its Repair. A. E. Benjamin, Minneapolis.—p. 164.

Dermatitis Medicamentosa: Teaching Summary. L. A. Brunsting, Rochester.—p. 169.

Fractures of Distal Half of Tibia and Fibula. E. H. Juers, Red Wing. —p. 172.

Diagnosis and Treatment of Conditions Associated with Varicose Veins. F. L. Smith, Rochester.—p. 175.

Metastasizing Argentaffine Tumor of Cecum in Case of Multiple Colonic Malignancies. C. W. Mayo and W. D. Wilson, Rochester.—p. 178.

New Jersey Medical Society Journal, Trenton

38:109-158 (March) 1941

Early Care of Depressed Fractures of Malar Bone. V. E. Johnson, Atlantic City.—p. 113.

The Physician and the Pharmacist. J. J. Debus, Jersey City.—p. 117.

Problems Encountered in Diagnosis and Treatment of Uterine Cancer. L. C. Scheffey, Philadelphia.—p. 120.

Transplantation of Ureters into Rectosigmoid and Cystectomy. C. C. Higgins, Cleveland.—p. 125.

Pulmonary Fat Embolism with Recovery. I. L. Applebaum and G. F. Hewson, Newark.—p. 131.

Digestive Disturbances in Hemorrhagic Diseases. T. Fitz-Hugh Jr., Philadelphia.—p. 132.

Quarterly J. Studies on Alcohol, New Haven, Conn.

1:605-812 (March) 1941

Alcoholism and Public Health. L. Kolb, Washington, D. C.—p. 605.

Introductory Remarks to Symposium on Alcoholism of the Research Council on Problems of Alcohol. T. Parran, Washington, D. C.—p. 622.

Effects of Alcohol on Electroencephalogram (Brain Waves). Pauline A. Davis, Waverley, Mass.; F. A. Gibbs, H. Davis, Boston; W. W. Jetter, Taunton, Mass., and L. S. Trowbridge, Boston.—p. 626.

Motor Response of Colon to Alcohol. H. F. Adler, J. M. Beazell, A. J. Atkinson and A. C. Ivy, Chicago.—p. 638.

Effect of Alcohol on Bile Volume and Constituents in Biliary Fistula Dogs. A. L. Berman, E. Snapp, A. C. Ivy and A. J. Atkinson, Chicago.—p. 645.

Alcohol as a Food. C. P. Richter, Baltimore.—p. 650.

Role of Insulin and Liver in Alcohol Metabolism. B. B. Clark, R. W. Morrissey, J. F. Fazekas and C. S. Welch, Albany, N. Y.—p. 663.

Absorption of Alcohol, with Special Reference to Its Influence on Concentration of Alcohol Appearing in Blood. H. W. Haggard, L. A. Greenberg and G. Lolli, New Haven, Conn.—p. 684.

Vitamin Deficiencies and Liver Cirrhosis in Alcoholism: Part II. Circulatory Disturbances: Part III. Pellagra. N. Jolliffe, New York. —p. 727.

Drunkenness as a Criminal Offense. J. Hall, Bloomington, Ind.—p. 751.

Texas State Journal of Medicine, Fort Worth

36:717-770 (March) 1941

*Diagnosis and Management of Cancer of Breast. A. C. Christie, Washington, D. C.—p. 722.

Endometriosis. H. M. Tigert, Nashville, Tenn.—p. 728.

Habitual Abortion. H. Beavers, Fort Worth.—p. 730.

Repair of Cystocele, Rectocele and Prolapse. G. F. Goff, Dallas.—p. 733.

Few Notes on Prenatal Care. C. P. Hawkins, Fort Worth.—p. 738.

Systemic Infections as Sequence of Paranasal Sinus Infection. O. M. Marchman, Dallas.—p. 742.

Clinical Diagnosis of Early Syphilis. P. Brown, Fort Worth.—p. 745.

Some Considerations in the Planning of State and Local Health Services. W. C. Williams, Nashville, Tenn.—p. 747.

Diagnosis and Management of Cancer of Breast.—Christie gives the following six points as guide to a course to be pursued in the treatment of mammary cancer: 1. A considerable percentage can be added to the five year survivals by a careful combination of radiation therapy with surgery. 2. Conservatism in the choice of patients for operation will reduce the total mortality. This will be accomplished by inducing women to come for operation earlier because of the greater percentage of cures among those operated on and because a less mutilating type of operation will be necessary. 3. Much can be accomplished by radiation therapy and minor surgical procedures in many cases which by properly revised standards should be considered inoperable. Such measures will add to the five year survivals, especially among elderly patients. 4. Roentgen castration should be a routine procedure in all women who have cancer of the breast and who have not passed the menopause. Pregnancy under such circumstances is especially dangerous. 5. The general management of the cancer patient requires the full cooperation of the general practitioner, the surgeon and the roentgenologist. 6. The 20 to 25 per cent of cures effected in cancer of the breast by radical operation can undoubtedly be improved if more patients can be induced to report as soon as anything abnormal is discovered in the breast. This will be greatly facilitated by more careful selection of cases for operation so that a much larger percentage of women will report themselves cured to their friends instead of exhibiting the results of an unsuccessful operation. Preoperative roentgen irradiation will probably improve the operative results by at least 10 and possibly 20 per cent. Also irradiation can assure a prolonged comfortable life to those whose disease is too advanced for surgery. An appreciable number of such patients may be clinically cured.

West Virginia Medical Journal, Charleston

37:145-192 (April) 1941

Industrial Hygiene and the Practicing Physician. J. W. Crosson, Charleston.—p. 145.

Relation of Physical Defects to Scholastic Standing. A. C. Woofter, Parkersburg.—p. 150.

Subtotal Infarction of Kidney (Nephrectomy, Cure). J. M. Emmett and M. L. Dreyfuss, Clifton Forge, Va.—p. 154.

Late Toxemias of Pregnancy. C. L. Goodhand, Parkersburg.—p. 157.

Viruses. R. M. Wylie, Huntington.—p. 165.

Soil in Relation to Health. C. R. Orton, Morgantown.—p. 171.

Conservative Treatment of Small Urethral Fistulas: Report of Two Cases. C. H. Engelfried and T. K. Laird, Montgomery.—p. 173.

The Child in the Public Health Program. J. M. Saunders, Washington, D. C.—p. 175.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

1:263-304 (Feb. 22) 1941

*Prevention of Gas Gangrene Infections in Experimental Wounds by Local Application of Sulfonamide Compounds and by Serums. F. Hawking.—p. 263.
Activation of Thromboplastin Preparations by Hemolysis and by Lecithin. A. Crosbie and H. Scarborough.—p. 268.
Cyclical Mucosal Ulceration. M. H. Pappworth.—p. 271.
Some Recent Air Raid Casualties. Margaret Ball and G. Quist.—p. 273.
Metabolism, Excretion and Human Requirements of Calcium. R. A. McCance.—p. 276.

Prevention of Gas Gangrene Infections.—Hawking determined the effect of sulfonamide compounds and antiserums on the prevention of gas gangrene in experimental wounds. The wounds were made in guinea pigs, one of the compounds was applied, a massive inoculation of Clostridium welchii, Clostridium septique or Clostridium oedematiens was introduced, the wound was closed and the efficiency of the treatment determined by the survival or death of the animal. Most control untreated animals died in twenty-four hours and showed the typical infection. Smears from the wounds of treated animals on the third day invariably revealed many clostridia. Macroscopic observation after the insertion of sulfanilamide, sulfapyridine or sulfathiazole in solid form subcutaneously or intraperitoneally revealed no signs of local inflammation. Microscopically a diffuse infiltration with polymorphonuclears and monocytes was found, but this was no larger than would occur with any foreign body. Sodium sulfapyridine, however, was very irritant, being strongly alkaline. Sulfathiazole was distinctly more active against Cl. welchii than sulfapyridine, while sulfanilamide occupied an intermediate position. The total survivals of all experiments with the four substances were: controls 0/18, sulfapyridine 5/18, sulfanilamide 8/18, sulfathiazole 10/18 and the mixture of two parts of sulfanilamide and one part of sulfathiazole 13/18. Sulfathiazole was the most potent compound against Cl. septique (survivals 75 per cent); sulfapyridine was inferior (38 per cent), sulfanilamide had practically no action (0 per cent) and the effect of the "mixture" was 41 per cent. The survival of animals infected with Cl. oedematiens after sulfanilamide and sulfathiazole was somewhat more numerous than that among the controls, but not significantly so. Life was often prolonged, the differences between the "guinea pig-day indexes" being just great enough to be statistically significant (probability, 1:20). In order to ascertain that survival was due to the specific action of the sulfonamide compounds, comparisons were made with sodium chloride, calcium carbonate and urea. Calcium carbonate or urea had no power to prevent infection, while sodium chloride favored its development. Comparison with other antibacterial compounds (benzyl sulfanilamide derivative and prontosil soluble) showed them to possess little or no activity. The survivals after *p*-benzyl-aminobenzene sulfonamide and prontosil rubrum were similar to those after sulfathiazole; but the clinical condition of the wounds was definitely worse. Nitrobenzene-sulfonamide was no better than sulfathiazole. Proflavine applied in strong concentration will certainly prevent infection of a wound by anaerobes subsequently inserted. On being reopened on the third day the wounds showed fairly healthy tissues and only a few bacilli. Nevertheless the mediocre results obtained with acridine compounds in the last war indicate that the value of proflavine is probably limited. Local treatment saved 58 per cent of animals infected with Cl. welchii and Cl. septique; systemic (intraperitoneal) treatment, even if given two hours previously, saved only 23 per cent. The effect of delaying local treatment was studied with Cl. welchii and with Cl. septique. When treatment was immediate, 20 of 30 animals survived; when delayed two hours, 3 of 15 animals survived and when delayed six hours none of 6 animals survived. None of the 30 controls survived. In the treatment of animals with antiserums the wounds were made according to the standard technic and the serum was injected intraperitoneally before or after the operation. On the third day the wound was reopened to remove the cloth, and the dose of antiserum was repeated. Two experiments were performed, the first with concentrated monovalent serums against the three clostridia and the second imitating the conditions in a casualty department where antitoxin is given prophylactically against an unknown infection. For this a commercial polyvalent serum containing Cl. welchii, Cl. septique and Cl. oedematiens antitoxins was injected intraperitoneally at operation or at various subsequent periods. Monovalent serums specific for Cl. welchii, Cl. septique or Cl. oedematiens protected the guinea pigs against the respective organisms. The polyvalent serum gave protection against most strains of Cl. welchii and Cl. oedematiens but not against Cl. septique. The transference of these results to human cases is not quite legitimate, but they do suggest that treatment along these lines would be beneficial to casualties. The treatment is innocuous and nonirritant. A number of air raid casualties and street accidents have received such treatment at adjacent hospitals, and the results have been extremely satisfactory, even in wounds with heavy initial contamination. So far as gas gangrene is concerned the treatment is chiefly prophylactic; and it is a supplement to proper surgical measures and not a substitute for them. Since serum and drug supplement each other, the ideal procedure for general use should include both.

Journal of Mental Science, London

87:157-312 (April) 1941

Observations in Hypoglycemia: Oral and Facial Movements. W. Mayer-Gross.—p. 157.
Influence of War on Mental Disease: Psychiatric Study. R. E. Hemphill.—p. 170.
Tests of Psychomotor Efficiency in Patients Treated with Metrazol. J. J. O'Connell and L. S. Penrose.—p. 183.
Study of Binet and Cattell Systems of Intelligence Testing in a Colony for Mental Defectives. J. C. Rohan.—p. 192.
Psychobiologic Approach to Acute Anxiety Attack. H. A. Palmer.—p. 208.
Spinal Injuries in Convulsion Therapy. L. C. Cook and D. E. Sands.—p. 230.
Psychic Illness Among Services in Singapore. W. R. Logan.—p. 241.
Treatment of Mental Disorders by Electrically Induced Convulsions. R. E. Hemphill and W. G. Walter.—p. 256.

Lancet, London

1:235-268 (Feb. 22) 1941

Development of Provincial Medical Education Illustrated in the Life and Work of Charles White of Manchester. A. H. Burgess.—p. 235.
*Chemotherapy of Gas Gangrene. J. McIntosh and F. R. Selbie.—p. 240.
Meningitis Following Spinal Anesthesia: Report on Eleven Cases. H. J. Barrie.—p. 242.
Culture of Intestinal Protozoa. S. Adler and Annie Foner.—p. 243.
Dysentery Due to Bacillus Dysenteriae Newcastle: Prevalence in Edinburgh. A. J. Rhodes.—p. 244.

Chemotherapy of Gas Gangrene.—McIntosh and Selbie obtained a virulent culture of Clostridium welchii which produced a 100 per cent mortality in mice within twenty-four hours after its intramuscular injection. They found that 20 mg. of sulfanilamide given locally delayed death considerably after subcutaneous injection of cultures of Cl. welchii. When the local dose was increased to 40 mg. the average time of survival was greatly increased. Comparison of the effects of the local administration of 40 mg. of sulfanilamide and 50 mg. by mouth within six hours shows that all mice treated locally (by injecting the drug suspended in the infecting inoculum) survived for three days, whereas those given sulfanilamide by mouth had an average survival of only one day. Combined local and oral treatment revealed that when an adequate amount is given locally there is no great advantage in giving more by mouth. As with sulfanilamide against Cl. welchii, local administration of any of the three sulfonamides (sulfanilamide, sulfathiazole and sulfapyridine) in all three causal organisms (Cl. welchii, septique and oedematiens) is more effective than oral treatment and there is no apparent advantage in supplementing local by oral treatment. All three drugs are of some value in delaying death, but sulfapyridine is of slightly greater value than sulfanilamide against Cl. welchii and Cl. oedematiens, and sulfathiazole is significantly more effective than the other two drugs against Cl. septique and Cl. oedematiens. Local treatment becomes less effective if its administration is delayed; therefore the sulfonamide drugs, if they are to be of considerable value in the treatment of gas gangrene, should be administered at the site of infection in large quantities and as soon as possible.

Presse Médicale, Paris

49:25-40 (Jan. 8-11) 1941

Sulfonamide Therapy in Cerebrospinal Meningitis Due to Meningococcus. C. Gernez and C. Huriez.—p. 25.
*Incidence and Importance of Intestinal Parasitism in Early Infancy: Its Place in Preventive Medicine. F. Coutelen.—p. 29.

Intestinal Parasites in Preschool Children.—Coutelen conducted systematic stool tests for three years on 649 healthy nursery school children aged from 2 to 6 years, of agricultural, factory and mining workers, living in and around Lille and Douai, in order to determine the incidence and variety of parasitic infection in normal persons. Altogether 1,847 fecal tests were completed, covering fifteen schools. The procedure included at least three completed anal analyses for each child and various additional concentration technics (method outlined). Of the 649 children, 448 (69.02 per cent) were found to be parasitized. Multiple infection was found in 233 (56.69 per cent), as many as six varieties sharing the human host. Protozoa were discovered in 286 children (63.83 per cent), helminths in 273 (60.93 per cent). Giardia lamblia (in 195 children) and Endamoeba coli (in 160) accounted for most of the protozoic infection. The helminths were represented by Trichocephalus trichiura in 170 children, by Oxyuris vermicularis in 129, by Ascaris lumbricoides in 58 and by Blastocystis hominis in 155 children. Sex played no part except for pinworm infection. The incidence here in girls was almost twice that of boys (22.51 per cent against 11.45 per cent in Lille, 21.52 per cent against 12.71 per cent in Douai). Age seems to have only an inconsiderable effect on the incidence of infection. Fewer cases of parasitism (43.33 per cent) were observed among children of agricultural workers. Familial incidence was significant, Giardia occurring in 54 per cent of the children, Endamoeba coli in 58.33 per cent; oxyuriasis led with 87 per cent in the children of twenty-four families examined in Lille. The average infection for the fifteen schools was 66 per cent, the highest index rising to 92.15 per cent. Taenia saginata, Ancylostoma duodenale ("Old World" hookworm), Endamoeba histolytica, Strongyloides stercoralis and Hymenolepis nana were not encountered. The author regards systematic and thorough fecal analyses of presumably healthy persons as valuable prophylactically and, when applied to sections of the population, as possessing epidemiologic significance. The possibility of latent intestinal parasitism in very young children needs to be kept in mind in general practice as well as in family and institutional involvements.

Schweizerische medizinische Wochenschrift, Basel

71:49-80 (Jan. 18) 1941

Perilunar Luxation of Hand. A. Rauber.—p. 49.
Clinical Observations of Myocardial Infarcts. R. Levi.—p. 54.
Electrocardiographic Analysis by Means of Vectordiagnosis and Electric Fields. R. Burger and F. Wuhrmann.—p. 65.
Acanthosis Nigricans Hereditaria: Case. P. J. Schwarz.—p. 72.
*The Meinicke Flocculation Test in Legal Medicine. F. Naville and R. Herrmann.—p. 74.

Meinicke's Flocculation Test in Legal Medicine.—Naville and Herrmann stress the value of the Meinicke flocculation test for syphilis, in cases of sudden death, to determine the actual pathogenic picture and as an aid in assuring purity of cadaver blood before transfusion. The results of flocculation tests made on 50 cadavers were found to be in harmony with the anatomopathologic conditions. Experiments on living subjects indicated that the Meinicke test remained positive a longer time in the blood than the Bordet-Wassermann reaction. The Meinicke test was never negative when the Bordet-Wassermann was positive, but the Meinicke test might run the whole gamut from slight to intensive positive reaction when the Bordet-Wassermann was negative. The same relations were found for cadaver blood. Hence the two tests are needed in combination for transfusions to eliminate the danger of blood infection. The differences observed by other investigators in the Bordet-Wassermann reaction are attributable to the diversity of technical conditions encountered in the withdrawal of cadaver blood. Two cases of sudden death selected from several reported by the authors demonstrate the etiognostic value of the Meinicke test. A workman aged 44, the father of two healthy children, fell dead on the street on his way to work. He was never known to have been ill. The Meinicke test was slightly positive. At necropsy serious syphilitic lesions were found in the myocardium, coronary arteries and the aorta. A 33 year old well mother of a single healthy child was suddenly seized with a severe headache, a condition to which she was not previously subject. After two epileptic convulsions with coma she died, eight hours after the onset of the headache. The test was positive. The necropsy revealed an aneurysm in the sylvian artery with blood effusion. Meinecke's test, according to the author, is simple and requires no extensive equipment (procedure given). Blood is usually obtainable in sufficient quantities by subclavicular puncture but must be withdrawn as early as possible, not later than thirty-six hours after death, and be promptly placed in cold storage.

Deutsche Zeitschrift für Chirurgie, Berlin

254:1-72 (Sept. 17) 1940. **Partial Index**

Renal Calcifications. H. Bauer.—p. 1.
*"Lingering" Fractures (March Fractures). Wilhelm.—p. 11.
Myositis Ossificans Traumatica. G. von Pannewitz.—p. 20.
Coxa Valga in Congenital Luxation of Hip Joint. A. Brundiers.—p. 39.
Unusual Cutaneous Papilloma of Breast: Case. J. Schilling.—p. 64.

"March" Fractures.—Wilhelm discusses the pathogenesis of spontaneous metatarsal and pelvic fractures observed with relative frequency in the Polish campaign and seen under the stress of military drill and forced marches in young healthy recruits usually of asthenic build and physically unconditioned because of a life devoid of sports activities. There is no history of trauma, infection or neoplasm, nor are the patients conscious of a sudden pain at the time of onset. They continue their military tasks under difficulties until pain and edema call a halt. On roentgen examination a true fracture with fissure and callus formation is seen. Healing proceeds as in bone fractures caused by a trauma. Three case histories are selected by the author and related to the literature on the subject. In 1 case the lesion persisted with no callus formation even after six weeks of rest and foot immobilization. Metatarsal fractures call for prolonged rather than abbreviated rest. Multiple vitamin deficiency (A, C and D) may be involved. Pain of obscure origin in the metatarsus or pelvis after sustained walking or marching needs to be promptly examined roentgenologically. The value of sports, including barefoot walking, in building the musculature and ligamentous structure of the feet, cannot be overestimated.

Klinische Wochenschrift, Berlin

19:1073-1096 (Oct. 19) 1940

Melanophore Hormones and Dark Adaptation. A. Jores.—p. 1075.
Congestions Before the Heart. F. Meyer.—p. 1077.
*Effect of Sulfonamide Derivatives On Air Craft Pilots. W. Meister and W. Hestermann.—p. 1080.
Is Increased Nitrogen Excretion After Administration of Alcohol Indicative of a Toxically Increased Decomposition of Albumin? J. Mélka.—p. 1082.
EKG.-Axonometer. I. von Zárday.—p. 1084.

Effect of Sulfonamide Drugs on Air Craft Pilots.—Meister and Hestermann investigated the problems of whether the sulfonamides, by inducing marked methemoglobinemia, can reduce tolerance to high altitude in fliers and lower their efficiency under conditions of curtailed oxygenation. The tests were conducted on 18 subjects, half of whom served for each test, after their normal performance under normal conditions had been determined. The first test was made in an underpressure chamber after previous administration of paraacetylaminobenzenesulfinanilid, 1 Gm. of which elicits a 20 per cent methemoglobin and induces cyanosis of the face, fingernails and lips. These 9 subjects were given from 1 to 1.5 Gm. three hours before the test. Cyanosis was plainly manifest. In the chamber a 3,000 meter altitude was reached within six minutes. Further altitudes were taken progressively at 1,000 meter advances at five minute intervals, while still higher altitudes were moderated to a 500 meter pace. In this test 6 of the 9 persons showed a tolerance reduction of only 500 meters, 3 none at all. In the second test the 9 subjects were treated for three days successively with several proprietary sulfonamides and set to inhale, under a gas mask, a mixture of oxygen and nitrogen (oxygen reduced to one third of normal levels) while writing numbers. Here the transition from the initial disturbances in writing was progressively followed to the point of the disrup-

tion of the handwriting due to manifestations of tetany. Only 1 subject showed a reduced performance (by two minutes). He had shortly before the test contracted an infection associated with fever. Acute febrile processes are known to diminish tolerance to high altitude. The author concludes that no causal connection exists between methemoglobin formation due to the use of sulfonamide derivatives and impairment of flying efficiency.

Monatsschrift für Kinderheilkunde, Berlin

85:1-164 (Nov. 28) 1940. **Partial Index**

Arachnodactylia and Brachydactylia. E. Glanzmann.—p. 5.
Erythroleukoblastosis of the Newborn: Case. H. Mellinghoff.—p. 70.
*Secondary Contracted Kidney and Genuine Sclerosis in Children: Case. S. Künstler.—p. 92.
*Parenteral Effect of Vitamin D. F. Thoenes.—p. 120.

Secondary Contracted Kidney in Children.—Künstler discusses the criteria of differentiating secondary contracted kidney from true sclerosis, both of which are found in children, on the basis of a case and the literature. In a case of nephrosclerosis in a boy aged 12 years, necropsy disclosed glomerulotubular nephritis with secondary contractions and considerable arterial and arteriolar sclerosis. The clinical picture of secondary nephritis is characterized by the anemic and cachectic appearance of the patient, early and persistent renal dysfunction, early cardiac insufficiency and hypertension, which, however, does not attain the high levels found in true sclerosis of the kidney. There is a long period of latency. Death may supervene, as in this case, from apoplexy. Necropsy of children discloses significant changes in the glomeruli and tubules, which represent a combination of inflammatory and degenerative processes consisting in atrophy and hyalinization. The interstitial connective tissue is increased. Regenerative formations are seen in the uriniferous tubules. Of all cases of contracted kidney found in children, those of a secondary nature are the most frequent and attributable to renal involvement due to children's diseases. The frequency of nephrosclerosis in children is a question. Its latency may last from ten to twenty years. The author includes a discussion of the benign and malignant forms of this disease with clinical suggestions.

Parenteral Effect of Vitamins D_2 and D_3.—Thoenes reports the effect of vitamins D_2 and D_3, intramuscularly given, on 34 young children (29 nurslings, 5 of preschool age) affected with rickets in different stages of evolution. Of these, 22 were treated with vitamin D_2, the remainder with vitamin D_3, usually in doses of 15 and 10 mg. The progress of the investigation was controlled by roentgenograms taken at regular intervals and frequently by the analysis of the phosphorus-calcium levels of the serum. The site of the injection was irradiated immediately after each injection by means of a sollux lamp for twenty minutes. Most of the children were treated with vitamin D_2 during the winter season. All children suffered from more or less serious coexisting diseases such as spasmophilia, rhinopharyngitis, otitis media and chronic bronchitis. The results demonstrated that vitamins D_2 and D_3 elicit the same curative effects without distinction, though not with the promptness observed in oral medication (about one week's difference). Craniotabes, however, seemed to respond just as well to parenteral treatments. The delay in therapeutic response does not seem to be due to the fact that in parenteral dosing the participation of the liver is eliminated. Vitamins D_2 and D_3, employed intravenously by another investigator cited by the author, resulted in a more rapid rise of the phosphorus content.

Wiener klinische Wochenschrift, Berlin

53:1047-1064 (Dec. 20) 1940

Hay Fever. G. Hofer.—p. 1047.
New Method for Treatment of Gastric and Duodenal Ulcers. B. von Mezö.—p. 1049.
*Internal Treatment of Cholelithiasis. H. Kutschera von Aichbergen.—p. 1053.
Sources of Error in Neurologic Tumor Diagnosis. E. Pichler.—p. 1055.

Internal Treatment of Cholelithiasis.—According to Kutschera von Aichbergen two different effects are aimed at in the treatment of cholelithiasis, depending on its stage: (1) control of the attack and (2) increased motility of the biliary system in an effort to expel the stones or to prevent their formation. The treatment of biliary colic requires antispasmodic drugs. Not every biliary colic is caused by calculi. Colics may occur in cirrhosis of the liver, in gonorrheal disorders of the adnexa and in nervous, hyperexcitable young women. After a patient has passed through a severe biliary colic the nervous irritability must be reduced in order to decrease the predisposition to attacks. For this the author recommends mild antispasmodics and the application of warmth. Cholagogues and choleretics and foods that stimulate the flow of bile must be avoided during this period. Bile secretion cannot be permanently arrested, and, after the pains have subsided, efforts must be made to counteract the primary causes. These efforts have two aims: (1) removal of the existing gallstones and (2) prevention of the formation of new gallstones. The removal of gallstones is desirable if they cause pains; it is urgent in case of obstructive jaundice. If expulsion of the stones by potent choleretics and cholagogues proves impossible, surgical removal becomes necessary. The prophylaxis of new stone formation must be directed against the factors that bring on the formation of new gallstones. The author points out that every prolonged biliary stasis favors the development of concrements and stresses that, after a biliary attack has been arrested, choleretics and cholagogues must be given in order to stimulate the flow of bile. The pains involved in this hyperkinesis must be borne in order to effect adequate flushing of the biliary passages. The author evaluates different choleretics and suggests that infection plays an important part in the development of concrements. Medical therapy is effective only in the incipient stages of biliary infection; in the chronic infections surgical treatment is required. Dyscholia is another factor in the development of biliary calculi. This condition of the bile is the result of a hepatic disturbance, which in turn is brought on by gastrointestinal disturbances. For this reason the prophylactic treatment must first aim at a normal function of the gastrointestinal tract.

Archiv für Japanische Chirurgie, Kyoto

18:1-264 (Jan.) 1941. **Partial Index**

*The Impedin Phenomenon in Human Tumors. H. Joh.—p. 1.

Impedin Phenomenon in Human Tumors.—The discovery by several observers of the impedin energy inherent in neoplastic tissues has provided a new immunobiologic method of approach in the study of the etiology of human tumors. According to this theory, as formulated by Torikata (Die Impedinerscheinung, Jena, 1930), the impedin energy resides only in the microbiologic lipoprotein bodies; hence the presence of impedin energy which can be demonstrated in any given tumor tissue may be taken to constitute a provisional proof of the microbiologic origin of neoplastic growth. In order to obtain further evidence to test this hypothesis, Joh examined the impedin phenomena with 30 specimens of human tumors removed by operation. The filtrates from tumor tissues were prepared by grinding 1 Gm. of the fresh material with 5 cc. of physiologic solution of sodium chloride containing 0.5 per cent phenol, and the technic of opsonic index study as employed by Wright was followed, using suspensions of Staphylococcus pyogenes aureus. The suspension of leukocytes was prepared from a normal living guinea pig which had been injected intraperitoneally with 10 cc. of neutral meat juice; a small cannula inserted into the abdominal cavity allows a desired amount of leukocyte-laden peritoneal fluid to be withdrawn for the observation of phagocytosis. The examinations were repeated three times for each tumor filtrate and the average value was used to express the impedin action of the tissue. The positive impedin phenomena were observed with filtrates prepared from small and large round cell sarcomas, polymorphous cell sarcoma, spindle and giant cell sarcomas, osteogenic sarcoma, lymphosarcoma, melanosarcoma and other miscellaneous varieties of sarcoma; negative impedin phenomena were obtained with practically all types of epithelioma, fat and fibrous tumors, vascular tumors and tumors of the nervous system. From these observations the author concludes that the etiology of sarcomatous neoplasms is microbiologic in nature and that when microscopic examination gives uncertain results the impedin test may be employed to differentiate sarcomas from other types of neoplastic processes.

Book Notices

Born That Way. By Earl R. Carlson, M.D. Cloth. Price, $1.75. Pp. 174. New York: John Day Company, 1941.

The author is a neurologist who has achieved great respect in his special work with spastic children. In this book he writes an autobiography full of interesting details concerning his own development from a helpless spastic-athetoid cripple to a position of distinction in the medical world. Woven into this story are lucid simple explanations of the neurologic, orthopedic and psychologic problems easily understandable by the layman. Parents reading this book cannot help but become inspired to greater yet rational hopes for their own offspring similarly afflicted. Among several recent accounts this work is by far the best and should be recommended strongly by physicians to parents of spastic children. For the neuropsychiatrist, especially interesting is the effect of concentration and attention in alleviating athetosis. Likewise increased oxygenation, moderate doses of alcohol and intellectual activity seem to decrease the disability. The reviewer suggests that neurologists and orthopedists can profit greatly by reading the book, even though it is written for the public, for then too will their therapeutic pessimism be largely overcome.

Diseases of the Nervous System Described for Practitioners and Students. By F. M. R. Walshe, O.B.E., M.D., D.Sc., Physician in charge of the Neurological Department, University College Hospital, London. Cloth. Price, $4.50. Pp. 288, with 9 illustrations. Baltimore: William Wood & Company, 1940.

This is a primer in neurology. Whether such an elementary and superficial textbook on this subject is desirable and will prove useful to general practitioners and medical students is debatable. In any event the entire neurologic world cannot be other than disappointed that the editor of a leading neurologic journal and the most acrid critic among living neurologists should not have provided richer fare. As is to be expected from so eminent a neurologist, the limited information presented is, by and large, accurate; but there is no excuse for the numerous errors and bits of misinformation which the book contains. The statement on page 29 "that with cerebral disease incontinence . . . is not due to any special localization of the lesion" takes no cognizance of the excellent studies of Langworthy on the central innervation of the bladder which have been carried out for the past several years. In figure 1 the rubrospinal tract is shown as though it were a very important pathway, whereas in a man it is almost nonexistent and there is no evidence that it plays a significant part in human neurophysiology. The illustration on page 33 which shows part of the fibers of the optic tract terminating in the pulvinar of the thalamus and the nervous impulses being thence relayed to the calcarine cortex is not in accord with the known facts concerning the visual system. The unqualified statement on page 50 that in association with increased intracranial pressure "the systemic blood pressure does not rise above normal" is by no means always true. The statement on page 51 that there "is sufficient evidence to make it reasonable to suppose that occasionally a head injury may act as an exciting factor in tumor development within the skull" is one of those loosely made suppositions unsupported by qualification or factual evidence which cause honest men much difficulty in the courts. On the same page the author states that the classification of gliomas is "largely arbitrary and of ephemeral value" and then proceeds to utilize the terminology usually applied to the three most common gliomas. The fact that he discusses only the more common types does not make the existence of the oligodendrogliomas or the ependymomas any the less real, their classification any more arbitrary or diminish the value of knowledge about them. There is no well controlled basis for the statement on page 51 that surgical intervention may serve to transform a benign into a malignant glioma; and the further statement that "Sooner or later all gliomas prove fatal" is simply not true. The same erroneous pessimistic prognostication appears on pages 60 and 61. The advice on page 55 that examination of the cerebrospinal fluid obtained by lumbar puncture be used in the differential diagnosis of cerebellar medulloblastomas is dangerous instruction to be placed in the hands of the general practitioner and student and cannot be too severely condemned. The statement on page 55 that the protein content in the spinal fluid may be increased "up to 0.2 or 0.3 mgm. per 100 c.cms." is undoubtedly a typographic error. The "differential diagnosis" of vascular disorders of the brain on page 81 is confused and weak. The statement on pages 81 and 82 that high blood pressure usually accompanies atheroma of the cerebral arteries evidences an ignorance of observations at the necropsy table or a failure to correlate them with the clinical observations.

The remaining two hundred pages are similarly replete with errors and misstatements all of which cannot be detailed here, but in the event that this little book should prove popular it is to be hoped that they will be removed in subsequent editions.

There are practically no citations of relevant literature and no illustrations. This book is too elementary and the treatment of the subject matter is too misleadingly simplified to allow of its recommendation to students in American medical schools.

A History of Medicine. By Arturo Castiglioni, M.D., Research Associate in the History of Medicine at Yale University, New Haven. Translated from the Italian and edited by E. B. Krumbhaar, M.D., Ph.D. Cloth. Price, $8.50. Pp. 1,013, with 443 illustrations. New York: Alfred A. Knopf, 1941.

This book is the first American edition of the author's volume in Italian, which was published in Milan in 1936. The translator, Dr. E. B. Krumbhaar, has added a new bibliography, many references and much modern information. The volume has made for itself a leading place in the literature of the history of medicine, having passed through three editions in Italian and having been translated previously into French, German and Spanish. This is much more than a textbook. Whereas many another history of medicine is simply a record of dates and events, this book is enhanced by interpretation and philosophical analysis of the trends in various periods. The illustrations constitute one of the most valuable contributions in the book. In the section on modern medicine the author has carefully analyzed progress in each of many fields and rightly mourns the degradation of scientific medicine in Germany. Professor Castiglioni recognizes the danger that the practice of medicine, if it becomes too scientific, may yet remove the doctor from the patient. Thus he says "The physician of today, better realizing the limitations of bacteriological and other technical aids, is experiencing the need of returning to the patient's bedside, from which medicine should never have separated itself. With the extreme swing of the pendulum too much faith has sometimes been placed on the pronouncements of the laboratory when, forgetting the importance of the clinical picture, physicians have based their activities too exclusively on laboratory criteria. For some years now physicians have tended through ignorance of the possibilities and limitations of laboratory methods either to place too much reliance on what came out of the four walls of the laboratory or not to take advantage of the information that it could properly give. They tended to pay more attention to the evidence of the microscope and of chemical reagents than to the information obtained by their own senses from examination of the patients in the wards of the hospitals. Today, with a better knowledge of these possibilities and limitations, they tend to scrutinize sagaciously the information received from both sources. Clinical instruction in the hippocratic sense fortunately never was completely neglected, and voices continued to maintain the necessity of returning to the classical paths, reinforced with the riches of newly acquired knowledge, but with the eye steadfastly fixed on the goal of the patient's welfare. All the marvelous discoveries of recent times cannot remove the physician from his post of honor in detecting morbid phenomena and following the mysterious rhythm of life and death: a post, that is, at the bedside of the patient."

Here is a new history of medicine in English which has an appeal not only for every physician but for every reader. The crowded condition of the curriculum makes it almost impossible for the average student to become aware of the tradition and inspiration that support the modern teaching and practice of medicine. He will do well to orient himself in his chosen field by a careful reading of Castiglioni's monumental work during the coming summer.

Debatable Tumours in Human and Animal Pathology. By W. F. Harvey, E. K. Dawson and J. R. M. Innes. Published for the Cancer Control Organisation of Edinburgh and South-East Scotland. Cloth. Price, 10s. 6d. Pp. 124, with illustrations. Edinburgh & London: Oliver & Boyd, 1940.

This book deals with nine tumors about whose origins and essential nature oncologists disagree. Each tumor is described and illustrated, and an opinion, which the authors admit is often dogmatic, is expressed on the debatable points. The bibliographies are incomplete but are "directional" and useful. The authors regard seminomas as arising from undifferentiated epithelium of the seminiferous tubules; the granulosa cell tumor as of primitive ovarian follicle cell origin; "mixed tumors" of the salivary glands as epithelial (adenoma and adenocarcinoma, regardless of morphology) and not bidermal; malignant melanomas as carcinomas—epidermoid melanocarcinoma in the skin and neuroectodermal carcinoma of the eye—minimizing the neural theory; lymphoepitheliomas as either epidermoid or transitional cell carcinoma, or reticulum cell or lymphosarcoma; giant cell tumor of bone as a type of new growth intermediate between purely reactive tissue and blastoma; endothelioma as of mesodermic tissue origin and manifest as vasoformative or membranoformative and reuniting reticuloendothelium and vascular endothelium; lymphosarcoma as arising from the embryonal, mesenchymal, stem cell of lymphoid tissue; meningiomas as arising from the mesodermic stem cells of the pachymeninx or leptomeninx which are of meningeal endothelium with membranoformative or vasoformative tendency. The authors revive and enlarge the Cohnheim concept, which they repeat often, that ". . . all tumors are developed out of those undifferentiated, embryonal cells which remain as such into adult life" (p. 3), ignoring the evidence derived from experimental cancerogenesis, and they ignore the somatic mutation theory. Using contributions of experimental embryologists, they reach some provocative conclusions. The chapter on endothelioma is especially good. This book demands the attention of all those who try to keep informed on these tumors.

Aneurysms of the Cerebral Vessels with a Study of Thirty-Two Cases Found at 12,503 Consecutive Necropsies. By Cullen Ward Irish, M.D., Sc.D. This Study is a Chapter from a Monograph, "Vascular Encephalopathy," Submitted as a Thesis to the Graduate School of the University of Pennsylvania as a Partial Requirement for the Doctorate Degree in Neurology. Paper. Pp. 61, with illustrations. Ann Arbor: Edwards Brothers, Inc., 1940.

This monograph contains an excellent review of the literature and bibliography on aneurysm of the cerebral vessels. The etiology, symptomatology and incidence of cerebral aneurysms are demonstrated by reports of cases. Reports of cases of aneurysms of the anterior, middle and posterior cerebral arteries, the anterior and posterior communicating arteries and the internal carotid and the basilar arteries collected from the literature are presented. The author then reports data on the thirty-two cerebral aneurysms found in the course of twelve thousand, five hundred and three necropsies. Charts and drawings of the anomalies observed about the circle of Willis are included. The cases are discussed at length, and cases to demonstrate the symptoms of aneurysms in certain regions are reported. The type is readable, the photographs are clear and the text is interesting. Lithoprint as used in this book has its advantages in monographs of this type.

Tumores dos nervos perifericos. Pelo Dr. Walter Edgard Maffei, assistente do Departamento de anatomia patológica da Faculdade de medicina da Universidade de São Paulo. Tése para inscrição ao concurso de docência-livre da 9.ª cadeira, anatomia patológica (patologia geral e especial). Paper. Pp. 93, with 35 illustrations. São Paulo: São Paulo Editora Limitada imprimiu, 1940.

This monograph on peripheral nerve tumors has been presented in application for the chair of privatdozent in the pathologic department of the Medical School of São Paulo, Brazil, and constitutes the third of a series on tumors of the nervous system. In the two previous monographs the author treated the subjects of gliomas and meningiomas. The work is written in Portuguese. The author first explains the anatomic and histologic particularities of the peripheral nerves. He then briefly reviews the different concepts of the etiology of peripheral nerve tumors, from the pioneer work of Cheselden to the present time. The subject matter is arranged from the clinical point of view, and in successive chapters the author discusses (i) traumatic neuroma, (ii) solitary tumors of the nerves, (iii) multiple tumors of the nerves, (iv) malignant tumors of the nerves and (v) multiple tumors of nerves (von Recklinghausen's disease). He considers the differentiation of the von Recklinghausen syndrome from other entities, particularly leprosy. The differential diagnosis from leprosy is emphasized as being of great clinical importance. The monograph is well written and presents the problem clearly. There are good photomicrographs and illustrations of patients with von Recklinghausen's disease.

A History of Contagious Disease Care in Chicago Before the Great Fire. By Constance Bell Webb, Social Service Department. Montreal General Hospital, Montreal. Paper. Price, $1.25. Pp. 169. Chicago: University of Chicago Press, 1940.

This publication traces the progress of public health and health conditions in Chicago from the time this city comprised only an Indian agency, Fort Dearborn, Mr. Kinzie's Trading Post, a few huts of halfbreeds and the wigwams of the Pottawattamies, to the time of the great fire. In 1830 Chicago came into being and Fort Dearborn "disappeared." Three years before this time, in 1827, the state legislature passed a law providing for the punishment of any person rendering offensive or unwholesome, or obstructing or polluting any water course, lake, pond, marsh or common sewer. In July 1832 the first outbreak of cholera occurred when several companies of soldiers entered the fort. The author continues, in a well documented thesis, the history of health development in this early Middle Western settlement. One gains a good idea of the complexities and difficulties encountered by far sighted leaders in the struggle for healthful conditions in early Chicago. The text quotes in great detail from authentic sources the opinions, laws and resolutions passed and discussed by the town leaders. The Chicago Medical Society played a major part in the early health development of this city. However, since so little was known about cause and cure of disease, action often was late. This thesis probably will be of interest not only to the person interested in health development in Chicago but to persons interested in the early historical development and trend of medical thought during the nineteenth century.

Anus, Rectum, Sigmoid Colon: Diagnosis and Treatment. By Harry Ellicott Bacon, B.S., M.D., F.A.C.S., Clinical Professor of Proctology, Temple University School of Medicine, Philadelphia. Introduction by W. Wayne Babcock, A.M., M.D., LL.D., Professor of Surgery, Temple University School of Medicine. Foreword by J. P. Lockhart-Mummery, M.A., M.B., B.C. Second edition. Cloth. Price, $8.50. Pp. 857, with 507 illustrations, mostly original, by William Brown McNett. Philadelphia, Montreal & London: J. B. Lippincott Company, 1941.

In this edition approximately twenty-five illustrations and fifty references have been added. There is a new comment on colostomy, another on sacral resection and a new paragraph on the use of neosynephrin hydrochloride. Murrieta's operation for rectal prolapse is new to this work, and the author's operation for hemorrhoids has been rewritten. These and a few other minor changes complete the alteration; hence no new criticism is required. As was stated in the review of the first edition, the book is interesting and instructive and will prove valuable as a work of reference.

Experimental Physiology. By George H. Bell, M.B., B.Sc., Muirhead Lecturer in Physiology, University of Glasgow, Glasgow. Second edition. Boards. Price, 6s. Pp. 192, with illustrations. Glasgow: John Smith & Son, Ltd., 1940.

The new edition of this manual is, like the first, adapted primarily to the needs of the author's laboratory, although it has been enlarged by inclusion of experiments used in other laboratories. Many of these are devised for human subjects and as such represent a distinct improvement over the previous edition. The manual is greatly improved in minor details and can be readily adapted to any standard physiologic laboratory. While better than the average, it still has no especially distinctive features.

List of Respiratory Protective Devices Approved by the Bureau of Mines. By H. H. Schrenk. United States Department of the Interior, Bureau of Mines. Information Circular 7030R. Paper. Pp. 11, with illustrations. Pittsburgh, 1941.

This is the most recent revision of the list of approved respiratory protective apparatus issued by the Health and Safety Branch of the Bureau of Mines. Certificates of approval are issued only if the devices fulfil established requirements. These are discussed briefly in the circular.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

TYPHOID AND TYPHOID CARRIERS

To the Editor:—**Can you give me any information as to whether or not a person may be a carrier of typhoid bacilli for any length of time and yet may be susceptible to this organism and acquire the disease?**

M.D., Buffalo.

ANSWER.—Although uncommon, it is theoretically possible for typhoid carriers to contract the disease, and there are such instances on record. The explanation lies in several factors, involving personal variations in immunity to the disease after recovery and certain other aspects of the carrier state.

Epidemiologic surveys have clearly demonstrated that susceptibility to a given dose of typhoid organisms varies widely from person to person. Further, in those who have recovered from the disease, immunity is also a relative matter, so that large or overwhelming doses of organisms have produced the disease in such people, irrespective of whether they are carriers or not.

So-called healthy carriers have either (*a*) never suffered from the disease or (*b*) have had typhoid in a mild or unrecognized form. Certain individuals, called incubation carriers, harbor and discharge organisms for varying lengths of time, in one reported instance one hundred and seventeen days, before coming down with the disease. The mechanism and localization of invasion and the course of the bacillus through the body in healthy carriers has been shown to be identical with that followed in actual clinical typhoid. Later these people may succumb to the bacilli and contract the disease as the result of overwhelming autoinfection. This is less likely to happen to "recovered" carriers than to either the "healthy" or the "incubation" carriers. In any case it is a relatively rare occurrence.

Full discussion of this problem with references to original literature on the subject may be found in Gay, F. P.: Typhoid Fever (New York, Macmillan Company, 1918).

LACRIMATION AND TEAR GAS

To the Editor:—**1. Where can small quantities of "tear gas," i. e. sufficent to cause lacrimation in one person, be obtained? 2. Would it be harmful to a person exposed to it once or twice a month? 3. What are its composition and properties? I want it for some experiments on myself.**

Amy Weiss, M.D., Chicago.

ANSWER.—There are many chemical compounds which may cause lacrimation. The most common form of "tear gas," however, is chloracetophenone or mixtures containing this compound.

1. Small quantities may be obtained from commercial firms whose names can be secured from the local police station. Small quantities may also be made in a well equipped chemical laboratory.

2. There is no permanent danger from repeated exposures to the gas in the concentrations to which exposure usually occurs. Occasionally, workmen may suffer a dermatitis in the manufacture of chloracetophenone. There are no known allergic ocular reactions from repeated exposures. Occasionally, if the face is freshly shaven there may be some transient burning or even redness of the skin. With high concentrations, difficult to attain under ordinary circumstances, burns may occur.

3. Chloracetophenone is, chemically, phenylchlormethylketone, $C_6H_5COCH_2Cl$. The pure material is a powder having an odor of ripe fruit. The melting point is 59 C., and the boiling point is 247 C. The compound is resistant to heat and moisture and persists in the open air, in the summer for days and in the winter for weeks. Chloracetophenone is not destroyed by boiling. The compound is only slightly soluble in water but is readily soluble in the organic solvents. The odor is reported to be detectable when the compound is present in the amount of 0.0002 ounce (0.0056 Gm.) per thousand cubic feet of air; the concentration is intolerable at 0.34 ounce (9.4 Gm.) per thousand cubic feet of air for three minutes. Chloracetophenone is usually made from acetic acid, chlorine, sulfur monochloride and benzene in the presence of zinc chloride and anhydrous aluminum chloride as catalysts. Exposure causes severe blepharospasm and lacrimation, which passes off rapidly on exposure to a current of fresh air. The tears do not irritate the face. Usually no treatment is necessary, but, if the eyes continue to feel irritated, boric acid solutions may be used. The eyes must not be rubbed. Curiously, animals show no lacrimation from exposure to the usual concentrations of chloracetophenone.

PROTECTION AGAINST DERMATITIS CAUSED BY ARSENITE AND CAUSTIC SODA SPRAY

To the Editor:—**I have seen several men from ranches where the sodium arsenite is used who have had an eczematoid lesion which has involved the scrotum, the inner aspects of the thighs and the lower abdominal region. When these patients do not work with the sodium arsenite the lesion disappears, so that I feel certain that this substance is causing the cutaneous lesions. The men engaged in this work wear clothing consisting of long underwear, overalls, leather jackets and leather gloves. Any information which you can give which would further protect these men from the irritation caused by sodium arsenite would be appreciated.**

M.D., Arizona.

ANSWER.—Dermatitis from arsenicals is not infrequent. Schwartz and Tulipan in "A Textbook of Occupational Diseases of the Skin," on page 305, state that ulcerations of the skin and of the nasal septum, as well as vesicular or vesicobullous dermatitis with crusting, localized on the lower part of the abdomen, groins and thighs occurs among workers handling arsenicals. On page 310 of the same work, arsenic trioxide and sodium arsenite are specifically listed as active irritants of the skin.

It is well known that sodium hydroxide causes ulceration of the skin when in concentrated solution and dermatitis in more dilute solutions (Schwartz and Tulipan, p. 113).

The stock solution used for the eradication of mesquite consists of 8 pounds (3.6 Kg.) of arsenic trioxide powder and 2 pounds (0.9 Kg.) of caustic soda flakes dissolved in 3 quarts (liters) of water, forming a strongly alkaline, irritating and poisonous solution of sodium arsenite. Arsenic trioxide and caustic soda are themselves powerful cutaneous irritants and if they soil the clothes will cause dermatitis and ulceration of the skin in the presence of perspiration. The long underwear and the coveralls worn by the workers are conducive to perspiration, and the sites of heaviest perspiration, the groins and the belt line at the waist, are likely to show dermatitis from these powders penetrating the clothing. The finished stock solution when splashed on the clothes may soak through to the skin and cause dermatitis and ulcers. If it does not soak through to the skin and dries on the clothes, the perspiration coming through will redissolve the dried chemicals and thus allow them to come in contact with the skin and cause dermatitis and ulcers. The leather jacket and the leather gloves serve as better preventive clothing than the long underwear and coveralls because they are more impermeable.

The precautions to be observed by mixers of the stock solution, as published by the Southwestern Forest and Range Experiment Station, are as follows:

> The "stock solution" should always be mixed in the open and within a larger container, such as a 10 gallon oil drum which has had one end removed. Especial care should be taken to avoid spattering of the materials on the skin or into the eyes. Gloves and eye glasses should always be worn by the worker. Avoid breathing any vapors which may arise from the hot liquid. The solution resulting is sodium arsenite, which is extremely poisonous if taken either externally or internally by animals or human beings.

These measures are not sufficient to prevent dermatitis. They should include the following additional precautions:

> The stock solution should preferably be made under properly vented suction hoods. The mixer should wear rubber gauntlets, over which are buttoned sleeves of an impermeable material such as pliofilm, vinylite or koroseal (Schwartz, Louis; Warren, L. H., and Goldman, F. H.: Clothing for Protection Against Occupational Skin Irritants, *Pub. Health Rep.* **55:** 1158 [June 28] 1940). Coveralls made of the same material should also be worn. The mixer should wear goggles in order to prevent the irritant from getting into the eyes and a respirator in order to prevent the breathing of the poisonous dusts. If such suction hoods are not available, or if the stock solution must be made in the field, then it should always be mixed in the open and in large containers and the mixer should stand to the windward of the mixing pot and wear goggles, respirators, rubber gloves and such impermeable clothing as described above.
>
> The workers diluting the stock solution should be required to wear goggles, gloves and impermeable coveralls or impermeable sleeves, and long aprons instead of coveralls, and also to stand to the windward side of the mixing basin.
>
> The workers pouring the arsenic solutions into the trenches or when using the girdling method should be required to wear rubber gloves and impermeable coveralls or impermeable sleeves and long aprons.

After the solution placed in the basins or on the mesquite dries, the dust in the region may be carried by the wind into the clothes of the men and cause dermatitis. The dry residue from vessels and tools, if in sufficient quantity, may also permeate

the clothing of the workers and cause dermatitis. It is advisable that all men working at this occupation should wear impermeable clothing. This would obviate the necessity of wearing special underclothing.

PHARMACOLOGY OF IPECAC

To the Editor:—Has there been any authoritative work done clinically or pharmacologically since 1937 on ipecac? If so, can you lead me to this or other information? What dose taken three times a day for an adult would be considered safe to be used for a period of two weeks? Would the dose of 1 grain (0.06 Gm.) as listed in the U. S. Pharmacopeia three times a day be satisfactory or should a greater or a lesser amount be given, depending on the pathologic condition as it existed, say, for example, acute bronchitis? Is ipecac in doses of 1 grain injurious if used three times a day for a period of ten to fourteen days? Has any one been seriously hurt by taking this quantity of ipecac for this length of time? Are there any records of death occurring from the use of this drug in the dose and the length of time expressed? Is there any information which shows the comparative toxicity of ipecac and emetine?

M. A. Hodgson, M.D., Memphis, Tenn.

ANSWER.—In none of the recent textbooks of therapeutics is there any stated limitation to the length of time ipecac may be used as an expectorant; indeed, the only limitation at all seems to be due to the nauseant property of the drug. Abroad the infusion of ipecac is much used, but in this country the syrup, which is generally considered to be more reliable, is almost universally employed; however, it should be noted that recently Weiss and Sprague (*Am. J. M. Sc.* **194**:54 [July] 1937) have stated that they found considerable variation in the potency of various specimens of the syrup which they tested. Beckman (Treatment in General Practice, Philadelphia, W. B. Saunders Company, 1938, p. 24) said, in discussing the use of the syrup of ipecac as an expectorant, that the U. S. P. dose of 12 minims (0.74 cc.) is too large if the drug is to be repeated often (he considered that a dose every two hours is necessary for satisfactory expectorant action) and recommended a dose of 5 to 8 minims (0.3 to 0.5 cc.) in order to avoid nausea. Thus his total dose in a twenty-four hour period—giving the drug every two hours from 8 in the morning to 10 at night—would be approximately 4½ grains (0.3 Gm.) of ipecac, since the official syrup contains 7 per cent; the U. S. P. dose would be slightly more than 6½ grains (0.4 Gm.). Nowhere does one find stated a limit to the length of time over which such a dose may be administered with safety. Indeed there does not seem to be much reason to fear that toxic symptoms will follow the administration of even large doses of ipecac. For example, Andresen (*Am. J. Trop. Med.* **6**:119 [March] 1926), in the treatment of amebic dysentery, introduced a Jutte tube well down into the duodenum and after thoroughly washing out the intestine introduced 1 drachm (4 Gm.) of powdered ipecac and repeated this regimen daily seven times and after a week's rest went through the entire treatment again. There were no reports of systemic toxicity accompanying this regimen.

In earlier times there were many speculations with regard to the numerous substances obtainable from ipecac by extraction, but the theories with regard to the expectorant action of the drug finally settled down to three: first, that emetine was alone responsible; second, that cephalin was solely responsible, and finally, when saponin also was found to be present, the claim was made that it was the only true expectorant ingredient. However, the matter seems recently to have been settled on an experimental basis by Rosenthaler and Gordonoff (*Schweiz. med. Wchnschr.* **18**:450, 1937), who, using rabbits and a roentgenographic method, showed that both emetine and cephalin were active as expectorants and that saponin was able to increase the action of either of the other ingredients either singly or in combination, though alone it was not very effective. Thus it would seem that no advantage is to be expected from administering emetine instead of ipecac for expectorant purposes.

That emetine alone is highly toxic is of course well known, but this fact should not cause great toxicity to be ascribed to ipecac. Ipecac was used for a long time as an expectorant without any concern over systemic toxicity before the introduction of its active ingredient, emetine, in the treatment of amebic dysentery by Rogers in India in 1912. And it is to be pointed out further that this use of emetine is solely parenteral, necessarily so because its nauseant properties prevent the administration of sufficient quantities by mouth for effective amebicidal action. It would seem that the toxicity of emetine under these conditions is not at all to be related to the toxicity of the emetine which exists as an ingredient in the syrup of ipecac when used for expectorant purposes.

ANTIBODIES IN VACUUM-DRIED SERUMS

To the Editor:—I am unable to find much concerning lyophil antibody factors in the 1940 *Quarterly Cumulative Index Medicus;* there is some reference to dried plasma in relation to blood transfusion and to immune human serum but not about the immune serum or rather plasma in the solid dry form. I should like to get some information as to the fate of measles or scarlet fever antibodies for example, when they are dried and kept in the solid form under a partial vacuum.

Joseph H. Stickler, M.D., Baltimore.

ANSWER.—Vacuum-dried serums, that is, serums desiccated in vacuo from the frozen state by the lyophile, cryochem or desivac processes are definitely more stable than similar serums preserved in liquid form. Measles antibodies and scarlatina antibodies (excepting for antitoxin which is present in small amounts in human convalescent serum) cannot as yet be accurately titered, but those antibodies which can be accurately titered such as complement are shown to remain stable over long periods of time in the vacuum-dried state (up to three years or more) whereas under ordinary methods of storage in the liquid state there is a rapid deterioration with a loss of as much as 75 per cent in potency in a matter of days. It may be assumed that less labile antibodies than complement remain at their highest titer for even longer periods of time. The National Institute of Health has already allowed longer dating periods on vacuum-dried biologic preparations manufactured by certain commercial firms and human serum centers. Further information on this subject may be found in the references:

Flosdorf, E. W.; Boerner, F.; Lukens, M., and Ambler, T. S.: Cryochem-Preserved Complement of Guinea Pig Serum, *Am. J. Clin. Path.* **10**: 339 (May) 1940.

McGuinness, A. C.; Stokes, Joseph, and Mudd, Stuart: The Clinical Uses of Human Serums Preserved by the Lyophile Process, *J. Clin. Investigation* **16**: 185 (March) 1937.

Flosdorf, E. W., and Mudd, S.: Procedure and Apparatus for Preservation in "Lyophile" Form of Serum and Other Biological Substances, *J. Immunol.* **29**: 389 (Nov.) 1935.

CULTURE MEDIUMS FOR GONOCOCCI

To the Editor:—Would you please send or give me references to the best culture mediums for the gonococcus and the methods or technic involved? The cultural method offered by the Difco Laboratories is expensive, and I would like to use the culture method more frequently if I could prepare the culture mediums here.

D. T. Prehn, M.D., New London, Conn.

ANSWER.—The most satisfactory medium for the cultivation of gonococci in a small laboratory is the desiccated one marketed by Difco Laboratories under the name Bacto-proteose No. 3 Agar. It should be enriched just before pouring by the addition of 1/20 to 1/10 volume of sterile defibrinated blood of horse, sheep or rabbit (in that order of preference) or sterile ascitic fluid or, if none of these are readily available, Bacto-hemoglobin.

Many workers advise heating the blood to a dark brown. To do this, the melted agar may be allowed to cool to 70 to 75 F., the blood added, mixed and maintained at that temperature about ten minutes or until it looks like chocolate; then poured into Petri dishes.

Gonococci grow best at a temperature about 1 degree below customary incubator temperature, i. e. about 36 C. The addition of 5 to 10 per cent of carbon dioxide to the atmosphere usually stimulates growth. If the cultures are placed in a closed vessel, the carbon dioxide can be blown in from a tank or a Kipp generator, or a small bit of solid carbon dioxide may be dropped in before the vessel is closed, or enough sodium carbonate and dilute sulfuric acid can be put together in a beaker to evolve the required volume of carbon dioxide, which can be readily calculated.

STIPPLED RED CELLS AND LEAD POISONING

To the Editor:—A man aged 52 has worked fourteen years as a furnace man in a lead refinery. He has 6 to 10 stippled red cells in each high power field. He has some of the symptoms of lead poisoning, including headache and prostration, but has no lead line, wrist drop or abdominal symptoms such as colic and rigidity. What type of treatment is indicated and can he continue work?

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ANSWER.—Any one who has 6 to 10 stippled red cells in each high power field would be showing injurious effects of lead. It seems highly unlikely that a man would have that many stippled cells and still not have any lead line or lead colic, because this is a large number of stippled cells. If confirmed by further blood smears or, better, by additional evidence, the man should be relieved of his work until the stippling largely disappears. With the few symptoms present, probably the only treatment indicated would be ample calcium, best given in the form of milk.